THE UNITED REPUBLIC OF TANZANIA

NATIONAL EXAMINATION COUNCIL

GRADE A TEACHERS' CERTIFICATE EXAMINATION

635   **INFORMATION AND COMMUNICATION TECHNOLOGY**

Time: 3 Hours.   **ANSWER**   **Year: 2010**

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).**

1. Mention four disadvantages of relying only on internet resources for classroom teaching.

One disadvantage of relying only on internet resources is that it may encourage students to depend too much on online materials instead of developing independent reading and research skills. This dependency can limit their ability to use books, journals, and other reliable offline sources of knowledge.

Another disadvantage is the risk of exposure to inaccurate or unreliable information. Not all websites provide factual content, and students who lack evaluation skills may take false information as truth, leading to misunderstanding of concepts.

A further disadvantage is that internet use requires constant connectivity and electricity. In areas with poor infrastructure, reliance on internet resources alone can interrupt learning activities whenever there is no access to stable power or internet.

Lastly, overuse of internet resources can cause distraction. Students may be tempted to visit unrelated sites, such as social media or entertainment platforms, instead of focusing on academic resources. This can reduce classroom effectiveness and learning outcomes.

2. State four functions of an operating system in a computer.

One function of an operating system is resource management. The operating system allocates resources such as the CPU, memory, and storage devices so that different programs and users can run smoothly without conflict.

Another function is providing a user interface. The operating system offers an environment, either graphical or command-based, that allows users to interact with the computer system effectively and run applications.

A third function is file management. The operating system organizes, stores, and retrieves data in files and directories. This ensures that users can save documents, access them later, and maintain order in the storage system.

Lastly, the operating system provides security by controlling access to files and resources. It uses authentication methods like passwords and permissions to protect data and prevent unauthorized use of the system.

3. Describe four reasons why spreadsheets are important in preparing school financial records.

One reason spreadsheets are important is that they allow accurate calculations. A school can use formulas and functions to compute totals, averages, and percentages automatically, which reduces human error in financial reports.

Another reason is data organization. Spreadsheets provide rows and columns that make it easy to arrange income and expenditure systematically, ensuring that financial records are clear and easy to interpret.

A third reason is time efficiency. Instead of manually recalculating figures whenever changes occur, spreadsheets instantly update all related values once new data is entered, saving a great deal of time.

Finally, spreadsheets allow data presentation in visual formats like charts and graphs. This helps school administrators to quickly understand financial trends, such as income versus expenditure, making decision-making more effective.

4. Give four differences between primary and secondary sources of information.

One difference is that primary sources provide firsthand information collected directly from the field, while secondary sources present information that has already been processed, analyzed, or interpreted by others.

Another difference is that primary sources are usually original and specific to the research question, such as interviews, experiments, or observations, while secondary sources include materials like textbooks, journals, and reports which summarize findings from primary research.

A third difference is that primary sources often require more time and resources to collect because the researcher has to gather data directly, while secondary sources are readily available and can be accessed quickly through libraries or online databases.

Lastly, primary sources are less biased since the researcher controls the collection process, whereas secondary sources may contain bias from the original author's interpretation, which may affect the reliability of information.

5. State four signs that may indicate a computer is infected with a virus.

One sign of a computer virus is frequent crashing or freezing of programs. The computer may stop responding unexpectedly, making it difficult to complete tasks smoothly.

Another sign is the sudden appearance of unknown files or folders. A virus may create new data or duplicate existing files without the user's knowledge.

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A third sign is unusual error messages. The computer may display warning messages or open random windows that are not part of the normal operating system functions.

Finally, a virus-infected computer often becomes slow in performance. Tasks such as opening documents, browsing, or starting applications may take much longer than normal.

6. Outline four ways in which ICT can improve communication in rural areas.

One way ICT can improve communication in rural areas is through the use of mobile phones. Mobile networks allow villagers to make calls, send text messages, and access mobile banking services, reducing the need to travel long distances for simple communication needs.

Another way is through internet connectivity. When rural communities have access to the internet, they can connect to email, social media, and online platforms that allow them to communicate with relatives, government officials, and service providers.

A third way is the use of community radios powered by ICT tools. These radios broadcast important information about agriculture, health, and education to rural populations, ensuring they stay updated on developments that affect their lives.

Finally, ICT can improve communication in rural areas through e-government services. Citizens can access services such as registration, licenses, and official announcements online, reducing the cost and time spent traveling to towns for government services.

7. Explain four disadvantages of oral communication in managing school activities.

One disadvantage of oral communication in managing school activities is that it lacks a permanent record. Once instructions are given verbally, they may be forgotten or misinterpreted, which can lead to confusion and errors in carrying out tasks.

Another disadvantage is that oral communication can exclude those with hearing difficulties. Deaf or hard-of-hearing students and staff may not receive the message accurately, which creates inequality in access to information.

A third disadvantage is the possibility of distortion. Messages passed orally through different people may change in meaning as they spread, causing misinformation or incomplete understanding of the original message.

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Lastly, oral communication depends heavily on the speaker's clarity and tone. If the voice is too low, too fast, or unclear, listeners may misunderstand instructions, leading to mistakes in school management activities.

8. List four advantages of using wireless technology in a school environment.

One advantage of wireless technology is flexibility. Students and teachers can access the internet or share files from different locations within the school without being limited to wired connections.

Another advantage is cost reduction in infrastructure. Unlike wired connections, wireless systems reduce the need for expensive cabling, making installation easier and less costly.

A third advantage is mobility. With wireless technology, devices such as laptops, tablets, and smartphones can connect to the network while moving around the campus, encouraging more interactive learning.

Finally, wireless technology makes expansion simple. Adding new devices or extending the network does not require rewiring, so schools can grow their ICT systems quickly and conveniently.

9. Mention four challenges associated with using fiber optic cabling in schools.

One challenge of using fiber optic cabling is its high cost. The installation of fiber optic cables and the purchase of related equipment require a large investment that many schools cannot afford.

Another challenge is the complexity of installation. Fiber optic cables are delicate and require skilled technicians for proper setup, which adds to the overall expense and difficulty.

A third challenge is the difficulty of maintenance. When fiber optic cables are damaged, repairing them requires specialized tools and expertise that may not be available in rural or less-developed areas.

Finally, fiber optic systems can be affected by physical damage. Since the cables are made of glass or plastic fibers, they can break easily when bent or exposed to harsh conditions, causing communication breakdowns in schools.

10. State four possible reasons for a printer connected to a computer failing to print.

One possible reason is that the printer is not properly connected to the computer. A loose or faulty cable connection, or an incorrect wireless configuration, may stop the printer from receiving printing commands.

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Another reason is that the printer may not be installed correctly. Without the right drivers and software, the computer cannot communicate with the printer effectively, leading to printing failures.

A third reason is the possibility of paper jams. If paper is stuck inside the printer, it prevents new print jobs from being processed, and the machine will not function until the jam is cleared.

Lastly, low ink or toner levels can cause a printer to fail. If cartridges are empty or not properly installed, the printer will not produce any output even if all other connections are correct.

11. Discuss five socio-economic benefits that communities gain from the development of ICT.

One benefit of ICT development is job creation. The establishment of ICT industries and services provides employment opportunities for computer technicians, software developers, telecommunication workers, and online service providers, thereby improving people's income and reducing poverty.

Another benefit is improved business operations. ICT tools such as e-commerce platforms and mobile banking enable small and large businesses to market goods, receive payments, and communicate with customers more effectively, boosting trade within the community.

A third benefit is better access to education. ICT supports distance learning and online libraries, giving communities access to knowledge beyond their local schools. This allows learners in remote areas to study and upgrade their skills without having to move to urban centers.

A fourth benefit is the improvement of healthcare. ICT makes it possible for communities to access telemedicine services, electronic health records, and online health education, leading to quicker diagnosis and treatment, especially in areas where doctors are scarce.

Finally, ICT contributes to social interaction and cultural exchange. People can use ICT tools such as social media, emails, and video conferencing to communicate with relatives and friends worldwide, strengthening relationships and cultural awareness.

12. Explain five possible measures that can be taken by schools to secure their computers against hackers.

One measure is the use of strong passwords. Schools should ensure that all computers and online accounts are protected with complex passwords that combine letters, numbers, and symbols to make it difficult for hackers to guess.

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Another measure is the installation of reliable antivirus and firewall software. This software detects and blocks malicious programs that hackers use to access school systems, providing a barrier against unauthorized entry.

A third measure is limiting access rights. Administrators should restrict sensitive data and system settings to authorized personnel only, ensuring that students and casual users cannot accidentally or intentionally create security loopholes.

A fourth measure is regular software updates. Schools should always update operating systems and applications to close any vulnerabilities that hackers might exploit. Ignoring updates leaves computers open to attack.

Finally, the school should provide cybersecurity training. Teachers and students must be educated on safe internet practices, such as avoiding suspicious links and not sharing personal information online, in order to reduce risks of hacking.

13. Analyse five drawbacks of using e-mails as a primary means of communication in an educational institution.

One drawback is the lack of face-to-face interaction. E-mails remove the human element in communication, which can cause misunderstandings when tone or emotions are not properly conveyed.

Another drawback is vulnerability to cyber threats. Hackers and spammers can use e-mails to deliver viruses or phishing messages, which may compromise the security of school systems.

A third drawback is the requirement for ICT skills and internet access. Teachers and students without basic computer knowledge or reliable internet connections may not be able to use e-mail effectively, leaving them disadvantaged.

A fourth drawback is the limitation of attachments. Some e-mail services restrict the size of files that can be sent, making it difficult to share large documents such as videos or high-quality teaching materials.

Lastly, e-mails can easily be ignored or delayed. If recipients do not check their inbox frequently, urgent messages may not be read on time, disrupting smooth communication in the institution.

14. "The growth of ICT has transformed the education sector in Tanzania." Justify this statement by giving six points.

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One way ICT has transformed education is through e-learning platforms. Students can access lessons and resources online, which makes education available beyond the physical classroom.

Another transformation is digital libraries. Schools and colleges now provide electronic resources, reducing reliance on physical books and allowing learners to access a wide range of materials instantly.

A third change is in classroom teaching methods. Teachers use projectors, smart boards, and multimedia presentations to make lessons more interactive and engaging for learners.

A fourth impact is in assessment and evaluation. ICT tools such as online quizzes and computer-based tests provide quick feedback and reduce the workload of manual marking.

A fifth transformation is in administration. ICT has enabled schools to manage records, attendance, and finances more efficiently, saving time and improving accountability.

Lastly, ICT has expanded collaboration opportunities. Teachers and students can communicate and share ideas with peers in other schools, both locally and internationally, improving the quality of education.

15. Information is regarded as a strategic resource for national development. Discuss six reasons why effective access to information is crucial for developing countries.

One reason is that information guides decision-making. Governments and organizations rely on accurate data to plan policies, allocate resources, and implement development programs effectively.

Another reason is that information supports education. When students and teachers access the right information, they improve knowledge and skills, which builds human capital for the nation.

A third reason is the promotion of good governance. Access to information helps citizens stay informed about government activities, promoting transparency and accountability in leadership.

A fourth reason is economic development. Businesses use market information to make investment decisions, identify opportunities, and improve productivity, thereby stimulating national growth.

A fifth reason is disaster preparedness and response. Access to information about weather conditions, disease outbreaks, and emergencies helps communities prepare in advance and minimize risks.

Lastly, information empowers citizens socially and politically. It allows people to know their rights, engage in debates, and participate in democratic processes, contributing to national progress.

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16. ICT innovations have brought both opportunities and challenges to cultural values in Tanzania. With six points, assess the extent to which ICT has influenced culture positively and negatively.

One positive influence is cultural promotion. ICT platforms such as social media and websites allow Tanzanians to showcase their music, art, and traditions to the world, preserving and promoting cultural identity.

Another positive influence is cultural exchange. ICT enables people to interact with others globally, learning new ideas and practices that enrich their local culture.

A third positive influence is improved documentation of culture. Cultural events, dances, and oral histories can now be recorded digitally, ensuring they are preserved for future generations.

On the negative side, ICT has encouraged moral decay among youth. Some students imitate foreign lifestyles and behaviors seen online, which may conflict with traditional cultural values.

Another negative influence is the decline of traditional communication systems. People increasingly rely on digital media, which reduces the use of storytelling, proverbs, and other indigenous ways of knowledge sharing.

Lastly, ICT can contribute to cultural dependency. Overexposure to foreign media may cause people to undervalue their local culture and adopt foreign trends, weakening national identity.

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