THE UNITED REPUBLIC OF TANZANIA
NATIONAL EXAMINATIONS COUNCIL OF TANZANIA
DIPLOMA IN SECONDARY EDUCATTION EXAMINATION

738 INFORMATION AND COMMUNICATION TECHNOLOGY

Time: 3 Hours **ANSWERS** **Year: 2024**

Instructions.

1. This paper consists of sections **A** and **B** with total of **Fourteen(14)** questions.
2. Answer **all** questions
3. Section **A** comprises **Ten (10)** questions with total of **40** marks, while section B has four questions with total of **60** marks..
4. Cellular phones are **note** allowed in the examination room.
5. Write your **examination Number** on every page of your answer booklet(s).

SECTION A (40 Marks)

Answer **all** questions from this section. Each question has **four (4)** marks.

1. Classify computer according to the physical size.

   Computers can be classified according to their physical size into four main categories.

   The first category is supercomputers. These are the largest and most powerful computers used in complex scientific calculations, weather forecasting, and military operations.

   The second category is mainframe computers. These are large computers used by big organizations like banks, government institutions, and airlines for bulk data processing and handling multiple users simultaneously.

   The third category is minicomputers. These are medium-sized computers used by medium-sized businesses for departmental processes, database management, and transaction processing.

   The fourth category is microcomputers, commonly known as personal computers. These include desktops, laptops, tablets, and smartphones used for personal and small business activities like word processing, internet browsing, and gaming.

2. Examine how to select the best communication method by comparing traditional mail and electronic mail.

   When selecting the best communication method, one should consider speed. Electronic mail delivers messages instantly, while traditional mail may take several days to reach the recipient.

   Cost is another factor. Electronic mail is generally free or low-cost, requiring only internet access, whereas traditional mail involves expenses for paper, envelopes, and postage.

   Accessibility also matters. Electronic mail can be accessed anywhere with an internet connection, while traditional mail needs physical collection from postal addresses.

   Record-keeping convenience is better in electronic mail, as it provides automatic message storage and tracking, unlike traditional mail, which requires physical filing systems.

3. Elaborate four features of interactive multimedia in the teaching and learning process at teacher colleges.

   One feature is the combination of different media elements like text, images, audio, video, and animations, which makes learning content more appealing and understandable.

   Another feature is user interaction, where students actively participate by clicking, dragging, answering questions, or choosing learning paths, which improves engagement.

   Interactive multimedia offers feedback opportunities, allowing learners to get immediate responses to their actions, helping them correct mistakes and reinforce correct information.

   Lastly, it provides flexibility in learning pace, allowing students to revisit content as often as needed, enhancing individualized learning experiences.

4. Describe the steps to filter a dataset for student with unpaid college fees using the filter command.

   First, open the dataset containing student fee records in the data management software such as Microsoft Excel.

   Second, click on the column header that represents payment status, for example, “Fees Paid.”

Third, activate the filter command from the toolbar, usually found under the "Data" menu or ribbon.

Finally, select the filter option that displays only the records marked as "Unpaid" and review or process the resulting list as needed.

5. Describe the effects of exposing teenagers to unguided internet and social media.

Teenagers may be exposed to harmful or inappropriate content, such as violence, pornography, and offensive language, which can affect their moral behaviour and decision-making.

There is a risk of cyberbullying and online harassment, which can lead to stress, depression, and withdrawal from social interactions.

Prolonged and unsupervised use can lead to addiction, where teenagers spend excessive hours online, affecting their academic performance and physical health.

Unguided access may expose teenagers to online scams and identity theft, where they might unknowingly share personal information with strangers, risking their security.

6. Explain best ways to arrange computer desks in a computer laboratory.

Desks should be arranged to allow free movement between rows and columns, ensuring students and teachers can move comfortably without disruption.

Computers should be positioned to avoid screen reflections from windows or lights, reducing eye strain and improving visibility.

Each computer desk should have enough space for the monitor, keyboard, mouse, and writing materials to maintain a neat and comfortable working area.

The arrangement should allow for proper supervision by the teacher, either by placing desks in rows facing one direction or in a U-shape for easier monitoring.

7. Explain the importance of opting for interactive multimedia.

Interactive multimedia enhances understanding by presenting content through various formats like videos, animations, and interactive quizzes, making abstract concepts clearer.

It encourages learner engagement and active participation, as students interact with content, making learning enjoyable and memorable.

It caters to different learning styles, whether visual, auditory, or kinesthetic, by offering varied materials and activities.

Interactive multimedia supports distance and self-paced learning, allowing learners to access and interact with educational content from any location at their convenience.

8. Explain how adapting electronic communication in schools fosters science and technology.

Electronic communication enables quick sharing of scientific ideas, research findings, and academic resources among students, teachers, and researchers.

It encourages collaboration through online discussion forums, email, and video conferencing, where learners exchange scientific knowledge across different regions.

Adapting electronic communication provides access to online scientific databases, digital libraries, and educational platforms that enhance students' understanding of science and technology.

It promotes the integration of Information and Communication Technology in learning environments, preparing students for future scientific and technological careers.

9. Analyze four main steps to be followed when designing a database.

   The first step is identifying the purpose of the database. This involves determining the type of information to be stored and how it will be used.

   The second step is defining the data requirements, where the designer identifies the data fields, formats, and data types necessary for efficient database operation.

   The third step involves designing the database structure by creating tables, fields, and relationships among tables to ensure data is organized logically.

   The fourth step is testing and refining the database, which includes inputting sample data, checking for errors, and making necessary adjustments for smooth performance.

10. Understand Microsoft Publisher essentials: templates, shapes, WordArt, and design principles for effective publications.

    Templates in Microsoft Publisher are pre-designed layouts that help users quickly create brochures, newsletters, and posters by customizing text and images.

    Shapes are graphical objects like circles, rectangles, and arrows used to organize information visually or highlight key areas in a publication.

    WordArt is a text feature that allows users to create decorative headings and titles with different styles, colours, and effects to make publications more attractive.

    Design principles involve using balance, contrast, alignment, and white space effectively to create publications that are clear, professional, and visually appealing.

SECTION B (60 Marks)

Answer **all** questions from this section. Each question has **fifteen (15)** marks.

11. Explain five precautions that face a computer user after using it for a long time.

    Prolonged computer use can cause eye strain, so users should take regular breaks and adjust screen brightness to reduce discomfort.

    Back and neck pain may result from poor sitting posture. Users should use adjustable chairs and ensure monitors are at eye level.

    Continuous typing and mouse use can cause hand and wrist fatigue. It is advisable to use ergonomic keyboards and take short hand exercises.

    Overexposure to screens affects sleep patterns. Users should avoid prolonged computer use before bedtime to maintain healthy sleep routines.

    Extended computer use can lead to mental fatigue and stress, so incorporating relaxation activities and outdoor exercises is important for mental health.

12. Agree that the computer technology offers teachers and student as a supportive learning environment.

Computer technology provides access to digital educational resources like e-books, tutorials, and virtual libraries, supporting both teaching and learning activities.

It enables interactive learning through multimedia content, simulations, and educational games, making lessons more engaging and effective.

Computer technology fosters distance learning by supporting online classes, examinations, and student-teacher interactions beyond the classroom.

It also enhances research and project work, as students and teachers can gather information, process data, and prepare presentations efficiently.

13. Explain why the application of ICT in current Tanzania education system remains a challenge.

One challenge is limited infrastructure, where many schools lack enough computers, reliable electricity, and internet access to support ICT-based learning.

There is also a shortage of qualified ICT teachers, making it difficult to integrate technology effectively into the teaching and learning process.

High costs of purchasing and maintaining ICT equipment discourage schools, especially in rural areas, from adopting technology.

Limited awareness and training opportunities for both students and teachers hinder their ability to use ICT tools effectively in education.

14. Analyze the components of multimedia that clarify the multimedia.

Text is a primary component, providing written information, instructions, and labels to support other multimedia elements.

Audio includes voice, music, and sound effects that enhance the atmosphere, explain concepts, and attract attention.

Video combines moving images and sound, making complex processes and demonstrations easier to understand.

Graphics and animations are visual elements like pictures, drawings, and motion graphics that simplify explanations and make content more appealing and memorable.