

THE UNITED REPUBLIC OF TANZANIA
NATIONAL EXAMINATIONS COUNCIL OF TANZANIA
CERTIFICATE OF SECONDARY EDUCATION EXAMINATION

036/1

INFORMATION AND COMPUTER STUDIES 1

(For Both School and Private Candidates)

Time: 3 Hours

ANSWERS

Year: 2010

Instructions

1. This paper consists of sections A, B and C with a total of twelve questions
2. Answer all the questions in section A and B and one question in section C.

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1. For each of the following items (i) - (x), choose the correct answer among the given alternatives and write its letter beside the item number.

(i) When one record in a database table can only be related to at least one record in another database table, the relationship is called:

- A. One-to-many relationship
- B. One-to-one relationship
- C. Many-to-one relationship
- D. Many-to-many relationship
- E. Compound relationship

Answer: A. One-to-many relationship

(ii) An inkjet printer:

- A. Can make multicolor output
- B. Is often used for photos
- C. Makes images by forcing ink droplets through nozzles
- D. Is relatively inexpensive compared to laser printers
- E. Is more delicate than laser printers

Answer: C. Makes images by forcing ink droplets through nozzles

(iii) All software are either:

- A. Application or utility software
- B. Application or system software
- C. System or utility software
- D. Anti-virus or system software
- E. Anti-virus or application software

Answer: B. Application or system software

(iv) _____ is a single program that provides the functionality of a word processor, spreadsheet, and database manager and more.

- A. General-purpose application
- B. Software suite
- C. Integrated package
- D. Program manager
- E. Operating system software

Answer: C. Integrated package

(v) The single biggest drawback to the use of e-cash is that:

- A. The consumer does not yet believe that e-cash is safe to use
- B. Anyone can become an e-bank
- C. E-cash is easy to lose
- D. E-cash is impossible to replace
- E. E-cash makes money laundering easy

Answer: A. The consumer does not yet believe that e-cash is safe to use

(vi) The ability to add visual or sound effects to any object in a presentation is referred to as:

- A. Transition
- B. Automation
- C. Animation
- D. Clip art
- E. Customize

Answer: C. Animation

(vii) Which of the following characteristics affects the brightness of images that appear on a computer screen?

- A. Colour screen
 - B. Dot pitch
 - C. Screen size
 - D. Type of printer
 - E. Refresh rate
- Answer: E. Refresh rate

(viii) _____ allows you to reorganize and add more effects to your digital video footage.

- A. Video editing software
- B. Audio editing software
- C. Paint program
- D. Browsers
- E. Animation

Answer: A. Video editing software

(ix) The school administration experiences irregular and frequent high power in their computer laboratory. What advice would you give them so that they can protect their computers?

- A. To install Voltage Regulator
- B. To install UPS
- C. To install firewall
- D. To install Surge Protector
- E. To have standby fire extinguisher

Answer: D. To install Surge Protector

(x) A device that connects computers into a network and segments it is called _____.

- A. A switch
- B. A home router
- C. A hub
- D. A GPS
- E. A modem

Answer: A. A switch

2. Match the items or phrases in List A with the responses in List B by writing the letter of the correct response beside the item number.

List A

- (i) Topology
- (ii) Font
- (iii) Hyperlink
- (iv) Optical disk
- (v) Stylus
- (vi) User Interface
- (vii) Template
- (viii) Spooling
- (ix) Cache memory
- (x) FTP

List B

- A. Input device used instead of a mouse
- B. Temporary high-speed holding area between the memory and the CPU
- C. The process of queuing multiple print jobs
- D. Volatile storage that holds the program and data being processed by CPU
- E. Rules for exchanging data between computers
- F. An input device that resembles and works like a mouse
- G. Use laser technology and have great capacity of storage
- H. Set of characters in a particular type, style, and size
- I. Topographical order in the connection of computers
- J. A formatted document used to quickly create a standard document
- K. A part of a printer that deals with font of different colors
- L. Pen-like device with which the user of digitizing tablet sketches an image
- M. Rules of storing information that cannot be exchanged between computers
- N. Logical layout or shape of a local area network
- O. Unique name for an entire website
- P. Acts like a document that connects to other documents
- Q. Tells how to use a software program
- R. Link that is ready-made and cannot be altered by the user of a system in any way

Solution

- (i) Topology - N
- (ii) Font - H
- (iii) Hyperlink - P
- (iv) Optical disk - G
- (v) Stylus - F
- (vi) User Interface - Q

- (vii) Template - J
- (viii) Spooling - C
- (ix) Cache memory - B
- (x) FTP - E

3. In the following items, write (T) for True statements and (F) for False statements.

- (a) Encrypted data is not directly usable. T
- (b) Magnetic tape can handle sequential data storage and retrieval only. T
- (c) You can access the World Wide Web using the multimedia authoring software. F
- (d) A key field is used to uniquely identify a field. F
- (e) Links on the web can be any amount of text but not be images. F
- (f) A complete computer system has two parts which are hardware and software. T
- (g) The delete key erases characters to the right of the cursor. T
- (h) All computer viruses are destructive. F
- (i) Bar code readers use laser beams to convert patterns of printed bars into codes that a computer can understand. T
- (j) Plug and play allow users to dispose off files and retrieve them later. F

4. (a) Compare and contrast the operation of the `<Shift + Delete>` and `<Backspace>` keys on a keyboard.

- `<Shift + Delete>` permanently deletes a selected item without sending it to the recycle bin.
- `<Backspace>` removes text or files by moving them to the recycle bin or deletes characters to the left of the cursor during typing.

(b) Differentiate the following:

- (i) Double-click and drag
 - Double-click. Quickly pressing the left mouse button twice to open a file or folder.
 - Drag. Holding down the mouse button and moving an object or text to a new location.

- (ii) Scrolling and Word wrap
 - Scrolling: Moving up or down through content using a scroll bar or mouse wheel.
 - Word wrap: Automatically moving text to the next line within margins when typing.

- (iii) Icon and Dialog box
 - Icon. A small graphical representation of an application or file.
 - Dialog box: A window that prompts users to make a decision or enter additional information.

- (iv) Hacker and Cracker
 - Hacker. A person who gains unauthorized access to computer systems, often for testing security.
 - Cracker: A malicious hacker who breaks into systems to cause harm or steal information.

(v) Webpage and Website

- Webpage. A single document on the internet (e.g., an article).
- Website. A collection of interconnected webpages under a single domain (e.g., www.example.com).

5. (a) Explain what is meant by the term "electronic office."

An electronic office refers to a workplace equipped with digital tools and systems such as computers, internet access, and software to enhance productivity, communication, and record management.

(b) Describe any three principal features of an electronic mail system within an organization.

1. Messaging. Allows employees to send and receive emails instantly.
2. Attachments: Enables sharing of documents, images, and files with messages.
3. Group communication. Facilitates mass communication by sending a single email to multiple recipients.

(c) Explain what is meant by EFT.

Electronic Funds Transfer (EFT) is the digital transfer of money from one bank account to another through an electronic system, eliminating the need for physical transactions.

(d) Explain what a local area network is and give any two advantages obtained from its use.

A Local Area Network (LAN) is a network that connects computers within a small geographical area, such as an office or school.

Advantages:

1. Facilitates easy sharing of resources like printers and files.
2. Enhances communication and collaboration within the organization.

(e) With the aid of diagrams, describe briefly each of the following:

(i) A Bus network

A Bus network connects all devices to a central cable (the "bus"), and data travels in both directions along the cable.

(ii) A Ring network

A Ring network connects devices in a circular structure where data travels in one direction to prevent collisions.

(iii) A Star network

A Star network connects all devices to a central hub or switch, with communication passing through the hub.

6. (a) Explain the main difference between the use of magnetic tape and magnetic disk in data storage.

Magnetic tape is used for sequential data access, meaning data is read or written in a specific order. Magnetic disk allows random data access, meaning data can be retrieved directly from any location on the disk.

(b) Give two advantages of optical disks compared to magnetic disks.

1. Durability: Optical disks are less prone to physical damage than magnetic disks.
2. Portability: Optical disks are lightweight and easy to transport.

(c) Briefly describe the following:

(i) Data compression

Data compression reduces the size of files to save storage space or speed up transmission.

(ii) Data encryption

Data encryption converts data into a secure format to prevent unauthorized access.

(iii) Data integrity

Data integrity ensures that data is accurate, consistent, and unaltered during storage or transmission.

7. Describe the characteristics and purposes of the following:

(a) A Pointer

The pointer is a symbol, usually an arrow, displayed on the screen that is controlled by a pointing device such as a mouse. It allows the user to interact with graphical elements like menus, icons, and text.

(b) A Graphics Display

A graphics display presents visual information such as text, images, and videos on the screen. It is used in applications like gaming, video editing, and graphic design for better visual clarity.

(c) A Mouse

The mouse is an input device that allows users to interact with the computer by moving the pointer, clicking, and selecting objects on the screen. It typically includes buttons and sometimes a scroll wheel.

(d) A Pull-down Menu

A pull-down menu is a list of options that appears when a user clicks on a menu title in a graphical interface. It helps in organizing commands or actions under specific categories.

8. (a) Explain what is meant by the term database.

A database is an organized collection of data stored electronically to allow easy access, management, and retrieval of information.

(b) Mention any three characteristics that must be met in order to have an efficient database.

1. Data consistency to ensure accuracy.
2. Data integrity to maintain correctness.
3. Fast and reliable access to stored information.

(c) Give two reasons why a database might be preferred to data files.

1. Databases allow multi-user access simultaneously, whereas data files are often limited to single-user access.
2. Databases provide better security and backup options than data files.

(d) A Database Management System (DBMS) is a program that provides an interface between the operating system and the user and simplifies access to the data. Give two other functions provided by the DBMS.

1. Data backup and recovery.
2. Managing relationships between multiple data tables.

9. Explain how the following operations can be done on a computer with a keyboard but without a mouse:

(a) Copying a document

Use `Ctrl + C` to copy selected text or items.

(b) Paste the copied document

Use `Ctrl + V` to paste the copied content.

(c) Navigate through the document

Use arrow keys, `Page Up`, `Page Down`, `Home`, and `End` keys.

(d) Save a created document

Use `Ctrl + S` to save the document.

(e) Print a document

Use `Ctrl + P` to open the print dialog and confirm printing with `Enter`.

(f) Open the saved document

Use `Ctrl + O` to browse and open a saved document.

(g) Open a new document

Use `Ctrl + N` to create a new document.

(h) Close the opened document

Use `Ctrl + W` or `Alt + F4` to close the document.

10. (a) Describe the process involved in mail merging.

Mail merging involves creating a template document and linking it with a data source (e.g., Excel or Access) to generate personalized documents such as letters for multiple recipients.

(b) Describe the process of sending and receiving electronic mail.

To send an email: Compose a message, attach files if needed, enter the recipient's email address, and click Send. To receive: Log into your email account, and messages appear in the inbox.

11. (a) Give six examples of jobs that have been created by the introduction of IT.

1. Software developers.
2. Network administrators.
3. Data analysts.
4. Cybersecurity specialists.
5. Social media managers.
6. IT support technicians.

(b) Describe three other possible benefits of this increased use of IT.

1. Enhanced productivity through automation.
2. Improved global communication via emails and video calls.
3. Access to vast educational and professional resources online.

(c) Personal information stored electronically is potentially easier to misuse than kept in paper files. Give two reasons.

1. Electronic information is vulnerable to hacking and data breaches.
2. Digital data can be copied and distributed easily without detection.

12. (a) What is DTP?

Desktop Publishing (DTP) is the process of creating professional-quality printed materials such as flyers, brochures, and newsletters using specialized software.

(b) Explain, in simple terms, what the above sentence means.

DTP allows users to design and arrange text and graphics to create visually appealing documents for printing.

(c) Students in your school are going to produce a school newsletter which will be produced using DTP.

(i) Give three items of hardware they might use apart from the computer (e.g., CPU, Keyboard, VDU, and mouse).

1. Printer.
2. Scanner.
3. Digital camera.

(ii) Give reasons for your choice of three items in (c)(i) above.

1. Printer: To produce physical copies of the newsletter.
2. Scanner: To digitize images or documents for inclusion in the newsletter.
3. Digital camera: To capture high-quality images for use in the newsletter.