

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: 2017

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 most correct answer among the given alternatives and write its letter beside the item number in your answer booklet provided.

i. The following are the types of data that can be used in the computer except

- A. Text
- B. Numeric
- C. Audio visual
- D. Physical
- E. Texture

Answer: D. Physical

Reason: Data used in computers typically includes text, numeric values, and multimedia formats (audio visual), but physical data (such as tangible objects) cannot be directly used by computers.

ii. Which one of the following is not an input device?

- A. Keyboard
- B. Mouse
- C. Scanner
- D. Microphone
- E. Projector

Answer: E. Projector

Reason: A projector is an output device used to display visual data on a larger screen, unlike input devices that send data to the computer.

iii. Which one among the following is not a modern way of disseminating information?

- A. Journal
- B. Internet
- C. Banner
- D. Television
- E. Whistle

Answer: E. Whistle

Reason: Whistle is a traditional method and not a modern way of disseminating information like internet, banners, or television.

iv. The following are examples of malicious codes except

- A. Computer Virus
- B. Trojan Horse
- C. Worms
- D. Firmware
- E. Malware

Answer: D. Firmware

Reason: Firmware is software programmed into hardware and is not considered malicious code like viruses, trojans, or worms.

v. The use of internet for selling and buying commodities is termed as

- A. E-mail accounting
- B. E-accounting
- C. E-commerce
- D. E-business
- E. C-selling and buying

Answer: C. E-commerce

Reason: E-commerce refers specifically to the buying and selling of goods and services online.

vi. Which one of the following is an example of a browser?

- A. AltaVista
- B. Yahoo
- C. Google Chrome
- D. MSN
- E. Bing

Answer: C. Google Chrome

Reason: Google Chrome is a web browser, while Yahoo and Bing are search engines. AltaVista is an outdated search engine, and MSN is a web portal.

vii. Which one of the following functions can return the sum of values in spreadsheet?

- A. =sum("C2:C6")
- B. =sum("C2/C6")
- C. =sum(C2:C6)
- D. =sum(C2/C6)
- E. =sum(C2.C6)

Answer: C. =sum(C2:C6)

Reason: This function syntax correctly uses a colon (:) to denote a range of cells to sum in a spreadsheet.

viii. A point of intersection between a row and a column in a spreadsheet is known as

- A. Cell
- B. Cell reference
- C. Cell address
- D. Address bar
- E. Label

Answer: C. Cell address

Reason: The cell address uniquely identifies the point of intersection, such as A1, B2, etc.

ix. The device that performs the function of signal modulation and demodulation is called

- A. Demodulator
- B. Modulator
- C. Repeater
- D. Modem
- E. Codec

Answer: D. Modem

Reason: A modem modulates and demodulates signals for transmission between computers over networks.

x. Which one of the following structure is used to store data items in relational database?

- A. Forms
- B. Tables
- C. Labels
- D. Macros
- E. Reports

Answer: B. Tables

Reason: Tables are the fundamental structures used to organize and store data in relational databases.

2. Match the following descriptions of computer peripherals in List A to their corresponding computer hardware in List B by writing the letter of the correct answer beside the item number in your answer booklet.

List A

- (i) A device that converts printed documents into electronic text without having to retype them
- (ii) A printer which has removable flower-like wheel consisting of spokes with embossed characters
- (iii) A printer that is expensive to buy but cheap to run
- (iv) Printers which are used in the point of sale terminals to print receipts and bar codes
- (v) A printer which is very expensive to run due to the higher cost of replacing the cartridges
- (vi) A device which looks like lever used to control a pointer on the screen
- (vii) A device that is used to enter data in form of speech in the computer
- (viii) A type of printer grouped into the impact printer that prints by striking its pins on the ribbon placed on the paper
- (ix) An input device which is usually found in a laptop computer
- (x) Devices which are used to print geographical, architectural, and engineering drawings

List B

- A. Daisy wheel printer
- B. Digital camera
- C. Dot matrix printer
- D. Inkjet printer
- E. Joystick
- F. Laser printer
- G. Microphone
- H. Mouse
- I. Photo printer
- J. Plotters
- K. Scanner
- L. Thermal printer
- M. Touch pad

Answers

- (i) K
- (ii) A
- (iii) D
- (iv) L
- (v) F
- (vi) E
- (vii) G
- (viii) C
- (ix) M
- (x) J

3. In the following items, write TRUE for a correct statement and FALSE for an incorrect statement.

i. Data manipulation is a new opportunity that the internet has made possible.

Answer: TRUE

ii. Hypertext markup language is a set of rules that control how data travels between server and client.

Answer: TRUE

iii. In Microsoft Word, it is not possible to perform mathematical calculations.

Answer: FALSE

iv. Graphic-based and Layout-based are types of desktop publishing software.

Answer: TRUE

v. Computers and transmission media require communication devices for the network to be fully operated.

Answer: TRUE

vi. A www is the world's largest library with billions of pages of materials to read.

Answer: TRUE

vii. Action query cannot insert new data into a data table.

Answer: FALSE

viii. Justification is a processing technique of adding extra spacing between words so that text fills the line length.

Answer: TRUE

ix. Thesaurus is an editing tool that helps the user to find words or phrases with similar meaning.

Answer: TRUE

x. Mail merge is a process of producing individual letters from a standard letter and data.

Answer: TRUE

4. a) By giving two examples, explain the term function.

A function is a predefined formula in a spreadsheet that simplifies complex calculations. It takes specific inputs to generate outputs automatically.

Examples:

- i. SUM(A1:A5) adds all values in cells A1 through A5.
- ii. AVERAGE(B1:B10) calculates the average of values in cells B1 through B10.

b) Describe three parts of the function defined in part (a) above.

- i. Function Name: Identifies the specific operation to be performed (e.g., SUM, AVERAGE).
- ii. Parentheses: Encloses the range or arguments required by the function.
- iii. Arguments: Refers to the input data or range of cells used in the function.

c) The formula listed in one of the cells is B4 * \$C\$4. Name and give the difference between the two types of cell references used in this formula.

The two types of cell references are:

- i. Relative Reference (B4): Changes when the formula is copied to another cell.
- ii. Absolute Reference (\$C\$4): Remains constant regardless of where the formula is copied.

5. Write HTML codes that will display the webpage given below.

```
<!DOCTYPE html>
<html>
<head>
  <title>Provide Information</title>
</head>
<body>
  <h2>Please provide the following information</h2>
  <form>
    Name: <input type="text" name="name"><br><br>
    Gender: <input type="radio" name="gender" value="female"> Female
           <input type="radio" name="gender" value="male"> Male<br><br>
    Married: <input type="radio" name="married" value="yes"> Yes
            <input type="radio" name="married" value="no"> No<br><br>
    Comments: <textarea name="comments" rows="4" cols="30"></textarea><br><br>
            <input type="submit" value="Send">
  </form>
</body>
</html>
```

6. a) Explain the following terms as used in presentation:

i. Presentation program

A presentation program is software used to create visual and multimedia displays for communication, such as slideshows. Examples include Microsoft PowerPoint and Google Slides.

ii. Custom animation

Custom animation refers to effects applied to text, images, or objects in a presentation to create motion and highlight important details.

iii. Slide transition

Slide transition is the effect that occurs when moving from one slide to another during a presentation. Examples include fade, dissolve, and wipe transitions.

b) Write steps required in printing a presentation handout with slides on a page.

i. Open the presentation file.

ii. Go to the "File" menu and select "Print."

iii. Choose "Handouts" under the print layout options.

iv. Specify the number of slides per page (e.g., 2, 3, or 6).

v. Set the printer preferences (e.g., color, orientation).

vi. Click "Print" to generate the handouts.

c) Describe two advantages of using electronic presentations.

i. Enhanced engagement: Electronic presentations allow the use of multimedia elements such as images, animations, and videos to capture attention.

ii. Ease of editing: Content in electronic presentations can be easily modified, rearranged, or updated without recreating the entire presentation.

7. a) Give two characteristics of a multimedia system.

i. Integration of multiple media: A multimedia system combines text, graphics, video, and audio for effective communication.

ii. Interactivity: Users can interact with multimedia systems to navigate, input data, or receive feedback, enhancing the user experience.

b) Explain the importance of text, image, and sound in the presentation.

i. Text: Text conveys key information and supports visuals with detailed descriptions, such as bullet points or captions.

ii. Image: Images provide visual representation, enhancing comprehension and retention of complex ideas.

iii. Sound: Sound improves engagement and adds emphasis, such as background music or narration, making the presentation more dynamic and appealing.

8. a) Define the term database query.

A database query is a request or command issued to a database to retrieve or manipulate data based on specific conditions. Queries help filter and access relevant data from large datasets.

b) Using a diagram, explain three types of relationships between tables in a relational database.

i. One-to-One Relationship

Each record in one table is linked to only one record in another table. Example: A table of students with unique IDs linked to a table of their personal information.

ii. One-to-Many Relationship

A single record in one table can be associated with multiple records in another table. Example: A table of customers linked to multiple orders in an order table.

iii. Many-to-Many Relationship

Multiple records in one table can be related to multiple records in another table. Example: A table of students linked to a table of courses through an intermediate table.

c) A garage specialized in selling second-hand cars uses the given tables.

i. Identify the primary key for each table.

- Product Details Table: Eng No
- Sales Table: Sales ID

ii. Which field is a foreign key?

- Eng No in the Sales Table is the foreign key.

iii. What type of relation exists between the two tables?

- One-to-Many Relationship (One product can be sold in multiple sales).

iv. Write the data type for each field in the Sales Table.

- Sales ID: Text
- Eng No: Text
- Price: Currency
- Discount: Percentage

9. a) State four major categories of computer network elements (components).

i. Network Interface Cards (NICs)

ii. Switches

iii. Routers

iv. Cables and connectors

b) Explain the function of Gateway and Repeater devices in a computer network.

i. Gateway: A gateway connects two different networks, translating protocols to ensure seamless communication between them.

ii. Repeater: A repeater amplifies and regenerates signals to extend the network's reach without losing data quality.

c) Describe four importances of computer networks in an organization.

i. Resource Sharing: Networks allow sharing of printers, files, and other hardware, reducing costs.

ii. Communication: Employees can exchange information via emails, chats, and video conferencing.

iii. Centralized Management: Networks enable centralized data storage and easy management of resources.

iv. Efficiency: Networks improve productivity by providing quick access to information and resources.

10. Explain four functions of Operating System (OS) in a computer.

i. Process Management

The operating system manages processes by scheduling tasks, ensuring that the CPU is allocated efficiently. It handles process creation, execution, and termination while preventing conflicts between multiple processes. For example, when multiple programs like a browser and a word processor run simultaneously, the OS ensures they operate smoothly.

ii. Memory Management

The OS allocates memory to programs and ensures efficient memory utilization. It also handles memory swapping when programs exceed the available RAM, preventing crashes. For instance, when using multiple tabs in a browser, the OS ensures each tab gets sufficient memory.

iii. File Management

The OS organizes and manages files on storage devices, enabling users to read, write, and modify files. It also provides directory structures for data organization. For example, the OS ensures a saved document is accessible and secure.

iv. Device Management

The OS manages peripheral devices like printers, keyboards, and mice by acting as a bridge between the hardware and the user. For instance, when printing a document, the OS ensures the printer receives the correct data.

11. The introduction of computers to society reveals many benefits; explain four advantages acquired by developing countries such as Tanzania.

i. Improved Communication

Computers enable instant communication through emails, social media, and video conferencing, reducing reliance on traditional methods. For instance, Tanzanian businesses can communicate with international clients instantly.

ii. Access to Information

Computers provide access to vast online resources, such as research articles and educational content. For example, students in Tanzania can use e-learning platforms to study advanced topics.

iii. Increased Efficiency in Business

Businesses can automate processes like accounting and inventory management, reducing errors and saving time. For instance, Tanzanian shops use computerized Point of Sale (POS) systems for better efficiency.

iv. Job Creation

The computer industry creates jobs in software development, IT support, and data analysis. For example, Tanzanian tech startups are providing employment to local developers.

12. Describe five components needed by an organization to have internet connectivity.

i. Router

A router connects the organization to the internet by directing data packets to their destinations. It enables multiple devices to share a single internet connection.

ii. Modem

A modem converts digital data from the organization into signals compatible with the ISP and vice versa. It establishes the internet connection.

iii. Network Switch

A switch connects multiple devices within the organization, enabling them to share the internet connection provided by the router.

iv. Internet Service Provider (ISP)

The ISP provides the actual internet service, allowing the organization to access online resources. For example, in Tanzania, ISPs like Vodacom or Airtel offer connectivity plans.

v. Cables and Connectors

Cables such as Ethernet cables connect devices like routers and computers to the network, ensuring reliable internet access.