

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: 2016

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.

i. A network hardware device that communicates with computers using telephone lines is called:

- A. Switch
- B. Router
- C. Modem
- D. Gateway
- E. NIC

Correct Answer: C. Modem

Reason: A modem modulates and demodulates signals for communication over telephone lines, while switches, routers, gateways, and NICs handle different network functions not specific to telephone lines.

ii. Computer specialists working in software houses are known as:

- A. Hackers
- B. Programmers
- C. Engineers
- D. Technicians
- E. Administrators

Correct Answer: B. Programmers

Reason: Programmers specialize in writing and maintaining software, unlike engineers or administrators who handle other responsibilities.

iii. Which of the following keyboard keys executes the function of 'Save as' command in most programs?

- A. F10
- B. F11
- C. F12
- D. F9
- E. F8

Correct Answer: C. F12

Reason: F12 is the default shortcut for the "Save As" function in most applications, while the other keys serve different functions.

iv. The process of restarting a computer is called:

- A. Cold booting
- B. Warm booting
- C. Hard booting
- D. Simple booting
- E. Permanent booting

Correct Answer: B. Warm booting

Reason: Warm booting restarts the computer without turning off the power, unlike cold booting which starts from a powered-off state.

v. The equivalent formula for =SUM(A10:A13) without the use of the function is:

- A. $A10+A12+A13$
- B. $A10+A11+A13$
- C. $=A10+A11$
- D. $A10+A12+A13$
- E. $=A10+A11+A12+A13$

Correct Answer: E. $=A10+A11+A12+A13$

Reason: The SUM function can be replaced with the addition of each cell value explicitly.

vi. A software program that enables a user to locate and retrieve specific information on the WWW is known as:

- A. Internet
- B. Google
- C. Yahoo
- D. Application software
- E. Website

Correct Answer: B. Google

Reason: Google is a widely-used search engine, whereas options like Yahoo are less universally recognized.

vii. Calculations, comparison, and logical operations in the CPU are performed at the:

- A. Calculation unit
- B. Arithmetic unit
- C. Arithmetic and logical unit
- D. Computer calculator
- E. Calculation and logical unit

Correct Answer: C. Arithmetic and logical unit

Reason: The Arithmetic and Logical Unit (ALU) is the specific part of the CPU responsible for these operations.

viii. What is the meaning of the term workbook as used in spreadsheet?

- A. Collection of worksheets
- B. Collection of spreadsheets
- C. Collection of cells
- D. Collection of sheets
- E. Collection of rows and columns

Correct Answer: A. Collection of worksheets

Reason: A workbook consists of multiple worksheets, whereas rows, columns, or sheets refer to individual elements.

ix. Computers which are characterized by superior hardware and software were developed in the:

- A. First generation
- B. Second generation
- C. Third generation
- D. Fourth generation

E. Fifth generation

Correct Answer: E. Fifth generation

Reason: Fifth-generation computers are advanced with AI and superior capabilities compared to earlier generations.

x. On a personal computer, all processing functions are contained on a single electronic chip called:

A. Arithmetic logical unit

B. Microprocessor

C. Transistor

D. Integrated circuits

E. Silicon chip

Correct Answer: B. Microprocessor

Reason: Microprocessors integrate all functions of a CPU, unlike transistors or individual ALUs.

2. Matching Items

List A:

- i. Maintain and troubleshoot network-related problems
- ii. Answer user inquiries regarding computer software or hardware operation to resolve problems
- iii. Set up security measures needed to control access to information
- iv. Monitor access and use of internet connection by enforcing security measures
- v. Keep up-to-date computer records (log files) of all information processing activities
- vi. Troubleshoot computer hardware and software-related problems
- vii. Customize commercial application packages to suit the organization's needs
- viii. Maintain and update software to meet day-to-day requirements while overcoming challenges
- ix. Create daily backup files, test page navigation links, and moderate blog comments
- x. Make sure that all tasks in the IT department are done correctly and on time

List B:

- A. Computer operator
- B. Computer technician
- C. System analyst
- D. Computer programmer
- E. Computer trainer
- F. Information system manager
- G. Database administrator
- H. Webmaster
- I. Network administrator
- J. Administrator

Answers:

- i. I

- ii. B
- iii. F
- iv. F
- v. G
- vi. I
- vii. C
- viii. E
- ix. H
- x. J

3. True or False

i. Laser and ink jet printers are examples of non-impact printers.

T

ii. Slide show view is the default view from which you can manage your presentations slide order as well as edit specific slides.

T

iii. Processing speed in microprocessors is measured in hertz/MegaHertz.

T

iv. Utility software is a kind of system software designed to configure and maintain the computer.

T

v. In HTML, logical tags specify exactly how the text will look.

F

vi. The fastest, most powerful, and most expensive category of computers is called microcomputer.

F

vii. Every Microsoft access table requires a primary key field.

T

viii. Cold temperatures are not as dangerous to a computer as overheating is.

T

ix. Word processors are not limited for working with text.

T

x. In any document, the left and right margins must be the same.

F

4. a. Define the term database

A database is a systematic collection of data that is organized in a way that allows easy access, management, and updating. It enables users to store, retrieve, and analyze data efficiently.

b. The database below contains data about items that have been ordered from various suppliers

Table copied as per the image

i. State the data types of the fields in the table given above

CODE: Text

SUPPLIER: Text

DELIVERY DATE: Date

PRICE: Currency

ii. If the search condition {CODE=5620} AND {PRICE<100} is used, write down the output using only the supplier field

Output: OM81

iii. Write down a search condition that will search for all items with a price more than \$50 and delivered in June

Search condition: {PRICE>50} AND {DELIVERY DATE>=6/1/2006 AND DELIVERY DATE<=6/30/2006}

5. a. What is a computer keyboard

A computer keyboard is an input device that allows users to input data, commands, and interact with the computer by pressing keys.

b. List five types of keys found on a computer keyboard. Give an example of each type

i. Alphanumeric keys - Example: A, B, C, 1, 2, 3

ii. Function keys - Example: F1, F2

iii. Control keys - Example: Ctrl, Alt

iv. Navigation keys - Example: Arrow keys, Page Up/Down

v. Numeric keypad - Example: Numbers 0-9

c. With examples, describe two disadvantages of automated production

i. High initial cost: Automated systems require significant investment in machinery and software, e.g., robotic arms in automobile production

ii. Job displacement: Automation reduces the need for human labor, leading to unemployment in sectors such as manufacturing

d. Mention three functional elements of the central processing unit and explain the function of each element

i. Arithmetic Logic Unit (ALU): Performs arithmetic and logical operations

ii. Control Unit (CU): Directs operations within the computer by interpreting instructions

iii. Registers: Temporarily store data and instructions for processing

e. Give four types of application software

- i. Word processors
- ii. Spreadsheets
- iii. Presentation software
- iv. Database management systems

f. Explain two effects of disposing electronic equipment to the environment

- i. Pollution: Toxic substances such as lead and mercury can leak into the soil and water
- ii. Waste accumulation: E-waste contributes to growing landfills, taking up valuable space

6. a. Give four examples of desktop publishing software available in the market today

- i. Adobe InDesign
- ii. Microsoft Publisher
- iii. QuarkXPress
- iv. Scribus

b. Explain four reasons why Desktop publishing (DTP) is more preferred than a word processor

- i. Advanced design tools: DTP offers tools for creating complex layouts that are not available in word processors
- ii. High-quality printing: DTP software supports high-resolution printing
- iii. Integration of multimedia: Allows insertion of images, videos, and graphics seamlessly
- iv. Customization: Provides flexibility to adjust spacing, fonts, and alignment for professional results

7. (a) Give four examples of desktop publishing software available in the market today

- i. Adobe InDesign
- ii. Microsoft Publisher
- iii. QuarkXPress
- iv. CorelDRAW

b. Explain four reasons why Desktop Publishing (DTP) is more preferred than a word processor

i. Better Layout and Design Tools.

DTP software provides advanced tools for creating complex layouts, such as brochures and magazines, which are not feasible in a word processor. For example, it allows multiple layers and precise control of elements.

ii. High-Quality Output.

DTP software is specifically designed to produce print-ready files with high resolution. This ensures professional output for materials such as posters and catalogs.

iii. Support for Multiple File Formats.

DTP applications support a wide range of file formats for images, text, and graphics, enabling seamless integration of multimedia. This makes it superior for projects involving high visual content.

iv. Enhanced Productivity

By providing specialized templates and automation tools, DTP software speeds up the creation process and reduces the time required to format and arrange content. This is essential for professionals working under tight deadlines.

8. (a) What formula was used to find the total time spent on the Internet?

=SUM(B5:B9)

b. What formula was used to find the average time spent on the Internet?

=AVERAGE(B5:B9)

c. Using absolute referencing, what formula was used to find the sub-total?

=B5*\$G\$5

d. Using absolute referencing, what formula was used to find VAT?

=D5*\$H\$5

9. (a) Explain two stages of Multimedia application development

i. Planning: In this stage, the goals of the multimedia application are identified, and the resources required for its development are allocated. This includes defining the content, choosing the platform, and organizing the layout.

ii. Development: This stage involves creating and integrating the various multimedia elements such as text, graphics, video, and sound into a cohesive application using specialized software.

b. Describe two categories of computer memory

i. Primary Memory: This refers to volatile memory such as RAM, which temporarily stores data and instructions that the CPU needs during processing.

ii. Secondary Memory: This refers to non-volatile memory such as hard drives and SSDs, which store data permanently for long-term access.

c. Explain how self-employment can be achieved by using computer or other ICT devices

ICT devices enable individuals to start small-scale businesses, such as freelance graphic design, online content creation, and digital marketing. They also allow for remote working opportunities and access to global platforms where individuals can sell their services or products.

10. "The internet is a harmful tool to man". What are your opinions? Describe only four points.

i. Spread of misinformation

The internet has made it easier to spread false or misleading information, which can lead to confusion, panic, or harm to society. For instance, during health crises, false remedies and conspiracy theories often go viral, causing people to act on harmful advice.

ii. Cyberbullying and harassment

Social media platforms and other internet-based tools are often misused for cyberbullying and harassment. This has led to psychological distress for many individuals, especially young people, and even contributed to extreme outcomes like suicide.

iii. Addiction and reduced productivity

Excessive use of the internet, especially for entertainment purposes like gaming and social media, can lead to addiction. This reduces time spent on productive activities and affects relationships and mental well-being.

iv. Privacy and security risks

Personal information shared online can be accessed by malicious individuals or organizations. This has led to identity theft, financial fraud, and unauthorized surveillance, posing significant risks to individuals and businesses.

11. Analyze four strengths and four weaknesses of the cables used for configuring communication networks.

i. Strengths

- a. High-speed data transfer: Cables such as fiber optics allow for high-speed data transmission, which is essential for modern communication.
- b. Reliability: Wired connections are less prone to interference compared to wireless connections, ensuring consistent performance.
- c. Security: Data transmitted via cables is harder to intercept compared to wireless networks, providing better security.
- d. Large bandwidth: Cables can support large amounts of data, making them suitable for high-traffic applications like video streaming.

ii. Weaknesses

- a. High installation cost: Setting up wired networks requires significant investment in cabling and infrastructure.
- b. Limited mobility: Devices connected via cables cannot be moved freely, reducing flexibility.
- c. Maintenance challenges: Cables are prone to wear and tear, which can lead to frequent maintenance or replacement.
- d. Environmental susceptibility: Cables can be affected by physical factors like water, rodents, or extreme weather conditions, disrupting network performance.

12. With examples, explain three types of lists used in HTML including the definition of the term HTML.

i. Definition of HTML

HTML (HyperText Markup Language) is the standard language used to create web pages and applications. It structures the content on the web using tags and attributes.

ii. Types of Lists in HTML

a. Ordered List ()

An ordered list is used when the items in the list need to be displayed in a specific sequence. The items are usually numbered. For example:

```
``html
<ol>
  <li>Step 1: Turn on the computer</li>
  <li>Step 2: Open the browser</li>
  <li>Step 3: Access the website</li>
</ol>
``
```

b. Unordered List ()

An unordered list is used when the items in the list do not follow a specific sequence. The items are usually marked with bullet points. For example:

```
<ul>
  <li>Apples</li>
  <li>Bananas</li>
  <li>Cherries</li>
</ul>
```

c. Description List (<dl>)

A description list is used to display a list of terms along with their descriptions. For example:

```
<dl>
  <dt>HTML</dt>
  <dd>A language for structuring web content.</dd>
  <dt>CSS</dt>
  <dd>A language for styling web pages.</dd>
</dl>
```