

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

036/1

INFORMATION AND COMPUTER STUDIES 1

(For Both School and Private Candidates)

Time : 3 Hours

ANSWERS

Year : 2020

Instructions

1. This paper consists of sections A, B and C.
2. Answer all questions in section A and B and **one (1)** question from section C.
3. Non-programmable calculators may be used.
4. Communication devices and any unauthorised materials are **not** allowed in the examination room.
5. Write your **Examination Number** on every page of your answer booklet(s).

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1. i) The following are physical network topologies except

- A. Ring topology
- B. Ethernet topology
- C. Bus topology
- D. Star topology
- E. Mesh topology

Correct answer: B. Ethernet topology

Reason: Ethernet is a communication standard that defines how data is transmitted over networks, not a physical topology. The others (ring, bus, star, mesh) are true physical network topologies.

ii) Which technology was used in the fifth computer generation?

- A. Large Scale Integrated
- B. Vacuum tubes
- C. Transistors
- D. Artificial intelligence
- E. Thermionic valves

Correct answer: D. Artificial intelligence

Reason: The fifth generation of computers is characterized by the use of artificial intelligence and advanced parallel processing techniques. The other technologies belong to earlier generations.

iii) Identify the correct data type in the field of gender in a given figure which is shown in a drop down list of M for male and F for female.

- A. Attachment
- B. Memo
- C. Lookup Wizard
- D. Hyperlink
- E. Yes/No

Correct answer: E. Yes/No

Reason: Gender field with limited options (M/F) is best represented by a Yes/No data type because it restricts entries to two possible values. Lookup Wizard is used to pull data from other tables, not to limit a field to two choices.

iv) Suppose you want to find and download computer studies books from the internet, which program would you use?

- A. Google search engine
- B. Mozilla Firefox
- C. Google Chrome
- D. Web browser
- E. Internet Explorer

Correct answer: D. Web browser

Reason: A web browser is the general program used to find and download resources from the internet. Mozilla Firefox, Google Chrome, and Internet Explorer are examples of web browsers, but the most accurate and general choice here is Web browser.

v) Which action enables a word processor to capture information?

- A. Copy and paste
- B. Cut and copy
- C. Cut and paste
- D. Copy and insert
- E. Cut and save

Correct answer: D. Copy and insert

Reason: Capturing information means taking data from one place and placing it into the word processor. Copy and insert achieves this, while the others are not standard or correct combinations in word processing terminology.

vi) What does the tag in HTML emphasize?

- A. Italic text
- B. Bold text
- C. Coloured text
- D. Underline text
- E. Enlarge text

Correct answer: D. Underline text

Reason: The tag in HTML is used to underline text. Italics () and bold () are handled by different tags, while specifically underlines content.

vii) Identify the type of malicious program that duplicates itself, blocking the computer memory and storage. The given options were:

- A. Virus
- B. Firmware
- C. Trojan horse
- D. Worm
- E. Spam

Correct answer: A. Virus

Reason: A virus is a malicious program that can duplicate itself and often causes damage by blocking or consuming memory and storage. Worms also self-replicate, but the keyword “blocking memory and storage” fits the definition of a virus.

viii) Amina was rewarded with a computer game DVD during her birthday. In which category does this gift fall?

- A. Entertainment software and storage device
- B. Utility software and storage device
- C. Application software and storage device
- D. System software and storage device
- E. Firmware software and storage device

Correct answer: A. Entertainment software and storage device

Reason: A computer game is classified as entertainment software. Since it was given in the form of a DVD, it also represents a storage medium.

ix) A school debate club invited speakers to address issues of gender and HIV/AIDS in the school assembly hall. Speakers used a microphone, a computer and a projector to demonstrate their presentation through animations and videos. What type of presentation was used in relation to the devices used?

- A. Audio and sound presentation
- B. Video and text presentation
- C. Visual and text presentation
- D. Multimedia presentation
- E. Power point presentation

Correct answer: D. Multimedia presentation

Reason: Multimedia presentations combine different forms of content such as audio, video, animations, and text, exactly as described in the question.

x) The following spreadsheet was prepared to show the results of the students who did three different tasks. In cell E5 an error occurred. What might be the reason?

- A. The column is not wide enough to accommodate the value.
- B. The formula references an invalid intersection of cells.
- C. The formula uses incorrect argument or operator.
- D. The reference to a value is not available to a formula.
- E. There is invalid cell referencing in the formula used.

Correct answer: D. The reference to a value is not available to a formula.

Reason: Errors in Excel like #REF occur when a formula tries to refer to a cell that does not exist or has been deleted. That is the most accurate reason for the error in E5.

2. Match the functions of desktop publishing (DTP) tools in List A to their corresponding tool names in List B by writing the letter of the correct response beside the item number in the answer booklet provided.

LIST A	LIST B
i) A tool which is used for magnifying publications view.	A. Shapes tool
ii) A tool which is used to turn around text or graphics.	B. Objects tool
iii) A tool which you can use to draw passage frames, insert and manipulate pages	C. Rotate tool
iv) A tool which can be used to pick, none and resize images and text	D. Select image tool
v) A tool which is used to draw basis figures and importing objects	E. Select tool
	F. Texted tool
	G. Zoom tool
	H. Text tool

Correct answers: G, C, F, E, A

3. Re-arrange the given sentences in a sequential order beginning with the first step to the last step.
- A. Click OK button.
 - B. Click print preview.
 - C. Click print from the file menu.
 - D. Open a document to be printed.
 - E. Select the printer.

Correct order: D, E, C, B, A

4. (a) Explain the importance of information in our daily life, with examples.

Information helps people in making informed decisions. For example, a farmer uses weather information to decide when to plant crops.

Information facilitates communication and understanding between individuals. For example, sharing news helps a community stay updated on current events.

Information supports learning and education. For instance, students use textbooks and online resources to gain knowledge in different subjects.

Information is crucial for business operations. For example, managers use sales data to plan for stock and future investments.

Information is also important in healthcare. Doctors rely on patient records and medical information to provide proper treatment.

- (b) Explain two ways of disseminating information with examples.

One way of disseminating information is through electronic media. For example, television and radio broadcasts spread news to a wide audience.

Another way is through print media. Newspapers and magazines are used to distribute information to the public.

5. (a) Explain three possible types of database model he/she could develop when designing a school database.

The hierarchical database model organizes data into a tree-like structure. For example, student data may be linked under classes and departments.

The network database model connects records through multiple relationships. For example, a student may be linked to several subjects and teachers.

The relational database model organizes data into tables with rows and columns. For example, student details, courses, and marks can be stored in separate tables and linked using keys.

- (b) State steps to follow in order to establish the relationship between two or more tables in the opened database.

The first step is to open the database application and select the option to view the relationships.

The second step is to add the tables that you want to relate into the relationship window.

The third step is to drag the primary key field from one table to the matching foreign key field in the other table.

The fourth step is to set the relationship type, such as one-to-one or one-to-many.

The final step is to enforce referential integrity to ensure data consistency between the related tables.

6. Read the given screenshot and answer the questions that followed:

- (a) What is the name of a processor available at Nyangaluka Company?

The name of the processor available is Intel(R) Core(TM) i5-6200U 2.30 GHz.

- (b) What are the sizes of primary memory and secondary memory offered by a company?

The primary memory size offered by the company is 8.00 GB RAM.

The secondary memory size offered is a 250 GB Hard drive with 7400 rpm.

(c) Assume you have requested a member of Nyangaluka Company to install for you Windows 7 instead of UNIX operating system. What four benefits do you expect to get on the use of such operating system?

Windows 7 is user-friendly and easy to operate compared to UNIX, making it suitable even for beginners.

Windows 7 supports a wide range of software applications and games which may not run on UNIX.

Windows 7 provides better hardware compatibility with devices such as printers and scanners.

Windows 7 has improved graphical interface and multimedia support which enhances user experience.

7. The JJ Company which deals with home theatre system has four offices in three different cities: Dar es Salaam, Mwanza and Dodoma. The Head of Department decided to connect all these offices through a network. However, he does not know the type of network to use.

(a) Explain to the Head of Department three types of computer networks you know and suggest the proper type of network to be established.

(b) Provide one advantage and one disadvantage of the type of network suggested in part (a).

(a) One type of computer network is the Local Area Network (LAN). This network covers a small area such as a single building or office. It allows computers to share resources like printers and files within a limited location.

Another type of computer network is the Metropolitan Area Network (MAN). This type covers a larger geographical area such as a city or several nearby towns. It is larger than a LAN but smaller than a WAN.

A third type is the Wide Area Network (WAN). This network spans very large geographical areas, often connecting offices in different cities or countries. It uses long-distance communication technologies like satellites and leased telephone lines.

The proper type of network to be established for JJ Company is a WAN because the offices are in three different cities.

(b) One advantage of a WAN is that it allows efficient communication and sharing of information between offices located in different geographical areas.

One disadvantage of a WAN is that it is expensive to set up and maintain because it requires specialized equipment and services from telecom providers.

8. (a) An academic master of your school asked you to prepare an end of term students' academic report using Microsoft Word. The report intends to include the table which shows different subjects and scored marks. As an IT student;
- i) Which steps would you follow to insert a table with 10 rows and 7 columns?

First, open Microsoft Word and place the cursor at the point where the table is to be inserted.

Second, click on the "Insert" tab in the menu bar and then select "Table".

Third, drag to highlight 10 rows and 7 columns or use the "Insert Table" option to specify 10 rows and 7 columns.

Finally, click "OK" and the table will be inserted into the document.

- ii) If after creating a table in part (a)(i), you realized that the word computer is typed komputa; which feature can you use to check and correct automatically other mistakes made?

The feature used to check and correct mistakes automatically is the Spell Checker. It detects misspelled words and suggests corrections.

- (b) Differentiate "autoText" from "autoComplete" as used in Microsoft Word.

AutoText is a feature that allows users to store frequently used text or graphics and insert them quickly into a document whenever needed.

AutoComplete is a feature that predicts the rest of a word or phrase as you type and offers to complete it automatically, such as suggesting the current date.

9. Suppose you have been sent by your parent to buy some of the household items from the shop. In order to make a clarification about the purchases, you decided to use the following worksheet for simplicity.

(a) Which function would you apply to find the cost of sugar?

The function to use is multiplication: $=B2*C2$, which gives the cost of sugar.

(b) Which function will you use to find the lowest cost for all items bought?

The function to use is $=MIN(E2:E5)$.

(c) Which function can be applied to count the number of cells that costs Tsh. 100 per item?

The function to use is $=COUNTIF(C2:C5,100)$.

(d) If the price of all items has been increased by 10%, which formula would you use in cell E2 in order to calculate the new cost of sugar?

The formula is $=B2C2(1+\$C\$7)$, where $\$C\7 contains the 10% increased price.

(e) Assume your parent wants to know the increased cost, which functions and formula can you use to accomplish this task?

The function is SUM, and the formula is $=SUM(E2:E5)*(1+\$C\$7)$, which calculates the total cost after adding 10%.

10. Explain five factors to be considered in order to prepare a quality presentation.

A quality presentation should consider the audience. The presenter must understand the level of knowledge and interests of the audience to tailor the presentation content accordingly.

The second factor is clarity of content. The information presented should be simple, clear, and well-structured to avoid confusing the audience.

The third factor is the use of visual aids. Presentations become more effective when supported by images, charts, or videos to make the content more engaging.

The fourth factor is time management. The presenter must plan the content to fit within the allocated time and avoid rushing or prolonging unnecessarily.

The fifth factor is confidence and delivery. The presenter should maintain eye contact, use clear voice projection, and show confidence to keep the audience attentive.

11. Describe four measures that could be taken to protect a computer from damage.

One measure is to use a surge protector. This protects the computer from sudden spikes in electrical power which could damage the internal components.

Another measure is to install antivirus software. This prevents malicious programs such as viruses and malware from damaging the computer system.

A third measure is to keep the computer in a clean and dust-free environment. Dust can clog cooling fans and cause overheating which may damage the hardware.

A fourth measure is to perform regular system updates and maintenance. Updating the operating system and applications ensures the computer remains secure and stable, preventing software-related damage.

12. Explain four virtual (effective) services enhanced by the use of internet in the society today.

One virtual service is online banking. People can transfer money, check balances, and pay bills without visiting the bank physically.

Another service is e-learning. Students and teachers can access educational materials and attend virtual classes from different parts of the world.

A third service is e-commerce. Businesses and customers use the internet to buy and sell goods and services through online platforms.

A fourth service is telemedicine. Patients can consult doctors online, receive medical advice, and access health information without physically visiting a hospital.