**451/1 - COMPUTER STUDIES – Paper 1**

**NYERI CENTRAL END TERM 2 EXAMINATIONS**

**Kenya Certificate of Secondary Education**

**(THEORY)**

**June. 2020 – 2½ Hrs.**

**Name:……………………………….………………………....Index Number:…………….………….**

**Candidates Signature:…….……………….................. Date:………………………………**

**Instruction to candidates**

1. *Write your name and index number in the space provided above.*
2. *Sign and write the date of examination in the spaces provided above.*
3. *This paper consists of* ***two*** *sections* ***A*** *and* ***B****.*
4. *Answer* ***all*** *the questions in section* ***A.***
5. *Answer question* ***16*** *and any other* ***three*** *questions from section* ***B.***
6. *All answers should be written in the space provided in the question paper.*
7. *This paper consists of 12 printed pages.*
8. *Do not remove any pages from this booklet.*
9. *Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.*
10. *Candidates should answer the questions in English.*

**For Examiner’s Use Only**

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| --- | --- | --- |
| **Section** | **Question Number** | **Candidate’s Score** |
| **A** | **1-15** |  |
| **B** | **16** |  |
| **17** |  |
| **18** |  |
| **19** |  |
| **20** |  |
| **Total** | |  |

***SECTION A (40 MARKS)***

***Answer ALL questions in the spaces provided***

1. Differentiate between embedded computer and dedicated computer (2 marks)

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1. The current monitor technology uses LED back lit technology. Give **two** advantages of using TFT monitors over CRT monitors (2 marks)

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1. A Form four student wants to send a large document to a printer.
2. State the name for the area of memory that the document is sent to immediately from RAM. (1 mark)

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1. As the printer runs out of paper during printing, the operating system sends a signal back to the computer to stop temporarily. Name this function of the operating system (1 mark)

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1. a) Differentiate between a flash memory and compact disk as used in computer storage devices. (2 marks)

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b) People like using DVDs overcompact disks yet they are of the same physical size. State **three**reasons that justifies this. (3 marks)

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1. For a monitor to display images, it must be connected through video port to a video adapter or controller mounted on the mother board. What is the role of a **video adapter**? (2 marks)

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1. Name four categories of input devices (2 marks)

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1. State any **two** physical measures taken to protect a computer laboratory from unauthorized access. (2 marks)

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1. Most word processors have some automated features such as word wrap and type over modes. Describe these features (2 marks)

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1. Differentiate between proofreading and formatting a document as used in word processing (2 marks)

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1. Most computerized systems in different organizations face a lot of unauthorized access such as **Eavesdropping**, **Surveillance**and **Industrial espionage**. State a control measure against each vice. (3 marks)

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1. A world wide web is a vast virtual space in the internet where information is made available such as web portals and blogs. Different between a **web portal** and a **blog.** (2 marks)

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1. Differentiate between **filtering** and **hiding** of rows/columns as used in spreadsheets (2 marks)

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1. Industrial plants use computer systems in different ways such as **Computer Aided design**, **manufacturing**, **Simulation** and **process control**. Explain how computers are used in the mentioned areas above. (4 marks)

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1. a) Differentiate between **Job displacement** and **Job replacement**. (2 marks)

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b) State **three** advantages of using automated production in manufacturing plants. (3 marks)

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1. Due to high demand and dynamic nature of computers and information systems, there is need for qualified computer trainers. What are the roles of computer trainers? (3 marks)

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***SECTION B (60 MARKS)***

***Answer question 16 (compulsory) and any other THREE questions from this section.***

1. a) By use of a Flowchart construct, differentiate between a **while loop** and FOR **loop** (4 marks)

b) Study this flowchart and use it to answer the questions that follow

YES

NO

S= 1

ENTER Y

Y = Y/10

Y < 10?

S = S+1

PRINT S

1. Give the expected output from the flowchart when the value of Y is: (4 marks)
2. 48

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1. 800

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1. Write the pseudocode that can be used to create a program represented by the above flowchart. (7 marks)

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1. a) Differentiate between **a primary key** and **a foreign key** as used in databases. (2 marks)

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b) State **four** factors to be considered when designing a good database (4 marks)

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c) Explain the use of each of the following field datatypes as used in database (3 marks)

1. OLE object

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1. Lookup wizard

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1. Memo

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d) Kibet has been experiencing a lot of problems in his computer. As a result, he decided to format his computer and re-installed a new operating system.

1. What is **formatting** in relation to the above context (2 marks)

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1. What precaution must Kibet observe before formatting his computer (1 mark)

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e) You are required to purchase an operating system. State **three** factors that you should consider before acquiring the software. (3 marks)

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1. a) Define the following terms as used in networking (3 marks)
2. Broadband

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1. Bandwidth

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1. Multiplexing

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b) List **four** elements of networking (2 marks)

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d) Most institutions are moving towards the use of fibre optic cables. State **three** reasons why fibre optic is preferred (3marks)

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e) Differentiate between **Hub** and **Bridge** as used in networking. (2 marks)

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f) The diagram below represents a signal transmission from point A to point E. Name the parts labeled A, B, C, D, E (5 marks)

**C**

**D**

**B**

**E**

**A**

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1. a) Binary systems have been used to develop most electronic devices. Give **three** advantages of using binary. (3 marks)

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b) Convert the following number systems (4 marks)

1. 37.62510 to binary

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1. BCD.EF16 to Octal

c) Using twos complement, perform the following arithmetic operation leaving your answer in decimal notation. (4 marks)

3910 – 1910

d) A student was developing a file. List any **four** attributes that the operating system will assign the file (2 marks)

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1. a) A system analyst in Changamwe preferred using phased changeover to implement a new system. State **three** reasons for this preference. (3 marks)

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b) State **three** reasons why an organization may change an information system. (3 marks)

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c) Different students were asked to state the characteristics of a system. The responses were:

1. They are holistic
2. They are open or closed systems
3. They have a boundary and environment.

Explain each of the above responses. (3 marks)

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d) Explain the following data collection stages as used in data processing (3 marks)

i) Data preparation

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ii) Media conversion

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iii) Input validation

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e) State **three** ways a data entry clerk may use to reduce threats to data integrity (3 marks)

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