**451/1 – COMPUTER STUDIES – PAPER 1**

**(THEORY)**

**FEB. 2022 - 2½ hours**

**Name: …………………………………………………….. School …………………………..……………**

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

**FLASH 2022 JOINT EXAM 1 – FORM 3**

**Kenya Certificate of Secondary Education**

**Feb 2022**

**Instructions to Candidates**

1. *Write your name and index number in the spaces provided above.*
2. *This Paper consists of* ***two*** *sections* ***A*** *and* ***B****. Answer* ***all*** *the questions in* ***section A****. Answer* ***question 16*** *(compulsory) and any other* ***three*** *questions from section* ***B****.*
3. ***All*** *answers should be written in the spaces provided.*
4. ***This paper consists of 13 printed pages.*** *Do* ***not*** *remove any pages from this booklet.* ***Candidates should check to ensure that all pages are printed as indicated and no questions are missing.***
5. ***Candidates should answer the questions in English.***

**FOR EXAMINER’S USE ONLY**

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| --- | --- | --- |
| **Section** | **Questions** | **Candidate’s score** |
| **A** | **1 – 15** |  |
| **B** | **16** |  |
| **17** |  |
| **18** |  |
| **19** |  |
| **20** |  |
| **TOTAL SCORE** |  |

SECTION A (40 Marks)

*Answer all the questions in this section in the spaces provided.*

**1.** Name **two** computer crimes. (1mk)

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**2.** Give **two** examples of the following:

a) Keying device (1mk)

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b) Pointing device (1mk)

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1. Scanning device. (1mk)

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**3.** List **two** things which accompany newly purchased software. (2mks)

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**4.** List **two** differences between analogue and digital data. (2mks)

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**5.** Define the term data processing as used in computer science. (1 mark)

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**6.** One of the keys, which can be used when designing a database, is primary key. What is a primary key? (1mk)

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**7.** a) List any **three** program control structures used in programming. (3mks)

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b) Explain the term “Disk formatting” (2mks)

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**8.** a) Define the term piracy. (1mk)

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b) List **two** ways of controlling piracy. (2mks)

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c) Explain **two** characteristics of the 5th generation computers. **(2 marks)**

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**9.** a) State **two** functions performed by the UPS. (2mks)

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b) Explain why the following controls should be implemented for computer based systems. (2mks)

 i) Back-ups

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1. Passwords

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**10.** Convert 10.37510 to binary. (3mks)

**11.** Mention **two** advantages and **two** disadvantages of Real-Time processing. (4mks)

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**12.** a) What is a word processor? (1mk)

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**b)** Outline any **four** editing features of a word processor. (2mks)

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**13.** List **two** advantages of using electronic spreadsheets over manual worksheets. (2mks)

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**14.** Explain the meaning of the following terms.

a) Logical file (1mk)

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b) Physical file (1mk)

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**15.** Explain why a value such as 6112335487694253 may be displayed as ######## when typed in a cell of a spreadsheet and state the possible solution that can done to display the entire number. (2mks)

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SECTION B (60 Marks)

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

**16.**



Study the flowchart above and answer the questions that follow.

a) Determine the value of F when N=3. (3mks)

b) Write a pseudo code for the above flowchart. (5mks)

c) Define the following terms as used in programming. (2mks)

i) Source code

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ii) Object code

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d) Differentiate between Assembler and Interpreter as used in programming. (2mks) ………………………………………………………………………………………………………………………………………………………………………………………………………………………………

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e) Identify the stage of system development life cycle where the following takes place. (3mks)

i) Feasibility study

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ii) File Conversion

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iii) File Requirements are stated.

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**17.** a) Define the following terms as used in networking. (3mks)

1. Network

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ii) Intranet

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iii) Browser

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b) UNEP is global entity that deals with environmental issues around the world. It has computer networks linking its regional and continental offices using internet. State **two** importance of the internet to such organization. (2mks)

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c) Mr. Muge, the Principal of Kamimei Boys High School wishes his school to have an internet connection in a bid to improve the school’s service delivery. Mention **four** internet connectivity requirements that must be present to make the connection possible. (2mks)

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d) Explain the following as used in e-mail:

1. Inbox (1mk)

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ii) Drafts (1mk)

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e) i) Failure of information systems is a major concern in the security of data in computing systems. State **two** causes of such failure. (2mks)

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ii) Explain the following computer crimes.

A) Fraud (1mk)

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B) Industrial espionage (1mk)

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f) Excluding passwords, state **two** other security control measures used to guard against unauthorized access to computers in a network. (2mks)

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**18.** In order to generate information from data items, a set of processing activities have to be performed on the data items in a specific sequence depending on the desired result.

a) Draw a well labeled diagram to illustrate data processing cycle. (2mks)

b) A data entry clerk experiences some common errors when typing. Most of the time, she finds that:

i) After every calculation, the result is less than the expected number of digits required e.g., 345.7896543 the result is given as 345.789

ii) Different characters are typed wrongly, for example instead of typing 12873457 she types 128734S7.

Identify the **two** types of errors commonly experienced by the clerk during data processing in (i) and (ii) above respectively. (2mks)

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c) State **two** ways a user can ensure data accuracy is maintained during data processing. (2mks)

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d) State **three** advantages of a computerized filing system as used in data processing. (3mks)

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e) i) Convert the 1010.0112 to decimal equivalent. (3mks)

ii) Using 8-bit notation, perform the **twos** complementof 2510 - 1510, leaving your answer in binary. (4mks)

**19.** a) Name **two** ways by which operating systems are classified. (2mks)

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 b) Distinguish between:

i) Formatting a disk and partitioning a disk. (2mks)

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ii) File and a folder (2mks)

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iii) System file and application file (2mks)

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c) List down four functions of an operating system. (4mks)

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1. Outline **two** factors you would consider if you were to buy an operating system. (2mks)

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f) Why must an operating system be installed in the computer before installing other software? (1mk)

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**20.** a) Differentiate between home page and web page as used in the Internet. (2mks)

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 b) Explain **two** ways in which the use of internet could make reporting of corruption easier. (2mks)

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 c) i) Write the acronym MODEM in full. (2mks)

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ii) Explain the purpose of a modem when connecting to the internet.  (2mks)

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 d) State **two** items that an electronic mail should have for it to be sent. (2mks)

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e) State the function of each of the following features of an email software:

i) Inbox (1mk)

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ii) Draft (1mk)

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f) Peter intends to download a movie from the Internet. State the three factors that may determine the total time taken to complete the download. (3mks)

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