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FORM 4 ENTRANCE EXAMS 2023

**NAME ……………………………………………..CLASS …………….ADM NO……..……**

**INDEX NO. …………….………… CANDIDATE’S SIGNATURE …………..…..………..**

**451/1**

**COMPUTER STUDIES**

**PAPER 1**

**(THEORY)**

**TIME: 2 ½ hours**

*Kenya certificate of secondary education*

***(K.C.S.E)***

**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**.
3. Answer **ALL** the questions in section A.
4. Answer **question 16** (compulsory) and any other **THREE** questions from section **B**.
5. **All** answers should be written in the spaces provided.
6. This paper consists of **12** printed pages. Candidates should check to ensure that all pages are printed as indicated and no questions are missing

**FOR EXAMINER’S USE ONLY**

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

***Section A (40 Marks).***

***Answer all questions in the spaces provided***

1. i) Define the term computer booting. (1 mark)

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ii) State three reasons that can make a user to warm boot a computer (3 marks)

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1. Direct data capture is one major way of inputting data into computers. State Three advantages for using an optical bar recognition. (3 marks)

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1. State the function of the following keyboard keys. (2 marks)

i) Scroll Lock

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ii) Num Lock

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1. Explain why powder and liquid fire extinguishers are not recommended in a computer laboratory. (2 marks)

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1. Distinguish between relative cell referencing and absolute cell referencing as used in computing giving an example in each case (2 marks)

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1. Computer technology has evolved from the first to the fifth generation computers. Name the technology, memory and programming language used in the 2nd generation computer. (3 marks)

Technology……………………………………………………………………………………………………………Memory…………………………………………………………………………………………………………………programming language…………..……………………………………………………………………………………

1. Describe each of the following computer cables

i) Universal serial Bus cable (USB) (2 marks)

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ii) Serial cable (2 marks)

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1. i) Define the term proofreading as used in word processing (1 mark)

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ii) Name **four** types of proofreading tools used in word processing (2 marks)

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1. A computer system needs a stable power supply. To filter out power problems such as black out, brownout, power surge and power sag, connect your computer to an interruptible power supply (UPS).

What do you understand by the following terms? (3 marks)

1. Power sag

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1. Power surge

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1. Brownout

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1. Define the term networking as used in computing. (1 mark)

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1. Differentiate between softcopy output and hard copy output in computers. (2 marks)

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1. Explain the following monitor terminologies as used in computing. (3 marks)
2. Resolution

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1. Color depth

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1. Pixels

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1. Differentiate between registers and Buses as used in computing. (2 marks)

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1. Explain the following types of memories . (2 marks)

i) Buffer memory

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ii) Cache memory

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1. a) Define the term troubleshooting as used in computing. (1 mark)

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b) State Three problems that may be experienced when using windows operating system (3 mrks)

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***Section B (60 Marks).***

***Answer Question 16 and Any Other Three Questions from this Section***

1. While developing software, the source code must be converted to object code, so that the computer can understand and execute the instructions; that process is called **translation**.
2. List **two** translating programs required to do that process. (2 marks)

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1. State **two** reasons why some programming experts prefer low-level languages over high-level languages while developing programs for use in a computer. (2 marks)

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1. A MOKASA class sat for a test in eight subjects. A student must get an average of 60% in all subjects in order to pass. A program is needed to accept data, process and generate a report that will show the **name**, **marks** obtained by each student per subject, the **average** mark and whether the student has **passed** or **failed**.

(i) **Write** a pseudocode used to solve this problem. (5 marks)

(ii) Draw a flowchart for the above program. (6 marks)

1. (a) Define the term data processing (1mk)

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(b) Distinguish between the following sets of terms as used in data processing

(i) Indexed sequential and Serial file organization (2mks)

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(ii) Interactive and Batch processing modes (2mks)

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(iii) Master file and Report file (2mks)

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(c) Explain Three computer crimes that compromise data integrity (6mks)

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(d) Explain WORM with respect to viruses. (1mk)

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(e) Identify the name given to the type of error that results from an arithmetic operation failing to produce an expected result (1mk)

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1. a) i) Describe how data is represented in an optical storage device. (2 marks)

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b) i) Convert the decimal number 38.62510 to binary (2 mrks)

ii) Convert the Hexadecimal number DA3.BC16 to Octal (2 mrks)

c) i) Letter N is represented by 1001110 using a certain coding scheme. Identify the type of coding scheme used (1 mark)

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ii) Using the same coding scheme named in C (i) above , show how letter K can be represented (2 marks)

d) Using twos complements, 8-bit representation, subtract 4310 from 2710 giving your answer in decimal notation (5 marks)

e) Using Binary coded decimal (BCD), find the value of 23410 (1 mark)

1. (a) Explain the following functions of operating system

(i) Memory management (2mks)

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(ii) Input/Output management (2 marks)

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(b) Maria, the school secretary prefers to compress her disk instead of using it in its original form. Give Two reasons for her preference (2 marks)

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(c ) Identify two ways in which operating system organizes information in a computer (2 marks)

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(d) Distinguish between portability and authenticity in relation to computer software (2mks)

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(e) A file is a group of related data designated by file name and the extension. The table below shows the file extension and the description of the file. Fill the blank spaces (2 marks)

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| **File extension** | **File description** |
| .Sys | System file containing commands loaded during boot up |
| .txt | ­­­­­­­­­­­­­­­­­­­­­­­­­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Ms-word document file |

f) i) Differentiate between Firmware and Utility software (2 marks)

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ii) Name the application software used to create presentations inform of slides (1 mark)

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1. A school wishes to be connected to the internet to enhance its service delivery.
2. State any **two** internet connectivity requirements that should be considered for the school to get connected. (2 marks)

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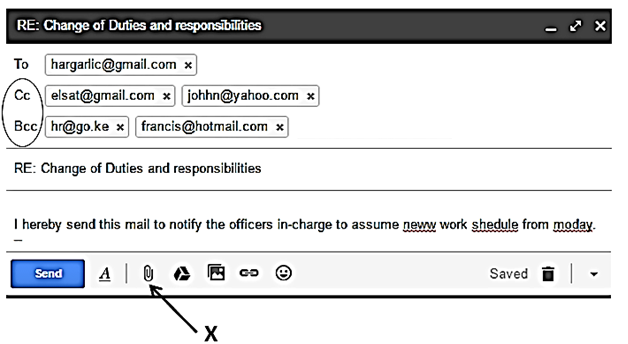
1. Nashipae wants to download a music album from a website to her computer. State **two** factors that determine the time taken to complete the download. (2 marks)

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1. The figure below shows an extract from compose e-mail window. Use it to answer questions that follow.



1. Name the icon labeled **X** and explain its purpose in e-mail. (2 marks)

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1. Write in full the meaning of the abbreviations **Cc** and **Bcc** respectively. (1 mark)

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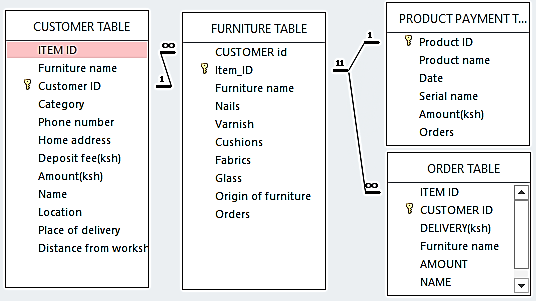
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1. One advantage of a database management system is centralization of data and enforcement of integrity.
2. Explain what is meant by enforcing integrity in databases. (1 mark)

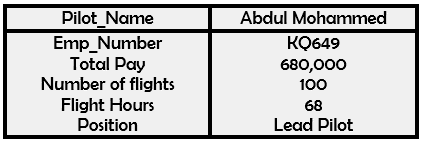
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1. Identify the type of database models depicted in each of the figures Q and R below. (2 marks)

***Figure Q ***

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***Figure R ***

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1. **(i)** Define the following terms as used in desktop publishing. (2 marks)
   * Master page

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* + Cropping

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**(ii)** State **three** factors considered when choosing a desktop publishing software. (3 marks)

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