**Name……………………………………………………… Index Number……………………**

**Admission Number………….………………………………Class……………………….........**

**Date………………….……………..………**

**CEKENA**

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

**FORM 4**

**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 16 printed pages.***
8. ***Do not remove and 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 Score** | |  |

**SECTION A (40 MARKS)**

**Answer all question**

1. In a computer class a teacher taught on removable storage media. State three precautions of preventing data loss in such media that the teacher may have mentioned. (3 marks)

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1. What is the function of an antistatic wrist member? (1 mark)

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1. Classify the following software’s according to purpose. (4 marks)

|  |  |  |
| --- | --- | --- |
|  | software | Classification |
| 1. | Need for Speed Game |  |
| 2. | BIOS |  |
| 3. | Google Chrome Browser |  |
| 4. | Adobe InDesign 6 |  |

1. Differentiate between Sequential file organization and indexed-sequential file organization.

(2 marks)

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1. List four threats to a computer system. (4 marks)

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1. Distinguish between relative and absolute cell references as used in spreadsheet. (2 marks)

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1. List three characteristics of a soft computer system. (3 marks)

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1. Briefly describe two transcription errors. (2 marks)

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1. a) List two advantages of secondary storage devices which make them indispensable part of a computer. (2 marks)

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b) Give two reasons why magnetic tape is not a popular secondary storage device. (2 marks)

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1. Define the following as used in word processing. (2 marks)
2. Word wrap***.***

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1. Drop Cap

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1. Orphan

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1. Widow-

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1. Name the two common types of system units and differentiate them. (2 marks)

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1. Without proper marketing, a business cannot survive in a competitive environment hence computers are being used in a number of ways to enhance marketing. List any three ways of ensuring this is effected. (3 marks)

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1. Control unit is an essential component of the CPU. Describe the functions of the control unit. (2 marks)

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1. Speech recognition devices are used to capture natural sound and convert the input into digital form. State two problems related to speech recognition devices. (2 marks)

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1. (a) Differentiate between pasteboard and master page as used in DTP (2 marks)

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1. Differentiate between graphic-based and layout based desktop publishing software. (2 marks)

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**SECTION B (60 MARKS)**

**ANSWER QUESTION 16 AND ANY OTHER THREE QUESTIONS IN THIS SECTION**

1. (a) Define the following terms as used in programming (2 marks)

i) Source code

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ii) Object code

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(b) Differentiate between Assembler and Interpreter as used in programming. (2 marks)

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(c) Identify the type of programming language used in the codes below; (1 mark)

(i) **1101 1101 1011 1011**

**1110 0001 1100 0111**

**0010 1110 1011 0011**

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(ii) **LDA A, 20**

**ADD A, 10**

**STO B, A**

**NOP**

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(d) On the Nairobi-Nakuru highway, the Kenya Police have put speed cameras at a certain point to read the time a vehicle passes a point (A) on the road and then reads the time it passes a second point (B) on the same road. (Points A and B are 200 meters apart). The speed of the vehicle is calculated using:

* ***Speed = (Km/ hr)***
* *The maximum allowed speed is 100 kilometers per hour.*
* *500 vehicles were monitored using these cameras over a 1-hour period.*

1. Write a pseudo code, which: (5 marks)

* Inputs the start time and the end time for the 500 vehicles that were monitored
* Calculates the speed for each vehicle using the formula above.
* Outputs the speed for each vehicle and a message if the speed exceeded 100 km/hour.

>=100km/hr “High Speed”

<100km/hr “Normal Speed”

1. Draw a flow chart for the above pseudo code. (5 marks)
2. a) Describe two health issues related to working with computers and give a remedy for each.

(4 marks)

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b) Robots are introduced into a factory which makes car engines. Describe three ways this could affect the workers. (6 marks)

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c) List two duties performed by the following personnel (2 marks)

i) Database administrator

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1. Computer trainer (2 marks)

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iii) Web administrator (2 marks)

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1. a) Differentiate between a database and DBMS. (1 mark)

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b) List two advantages of using electronic database systems. (2 marks)

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c) In database system, data integrity ensures the correctness and completeness of the data in the database. Differentiate the following types of integrity constraints.

i) Validity integrity (1 mark)

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1. Entity integrity (1 mark)

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1. Referential integrity ( 1mark)

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d) Briefly describe any three database models. (3marks)

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e) (i) Differentiate between error handling and interrupt handling as used in operating systems.

(2 marks)

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(ii) State **three** reasons why most network technicians prefer using command line operating systems to configure networking equipment. (3 marks)

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

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1. Intranet

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1. Browser

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(b) The World Health Organization is global entity that deals with health 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. (2 marks)

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(c) Mr. Zuma, the Principal of a school wishes his school to have an internet connection in a bid to improve its service delivery. Mention **four** internet connectivity requirements that must be present to enable the connection. (2 marks)

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(c) Explain the following as used in e-mail:

* Inbox (1 mark)

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* Drafts (1 mark)

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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. (2 marks)

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(ii) Explain the following computer crimes.

* Fraud (1 mark)

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* Industrial espionage (1 mark)

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

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1. (a) Convert the 1010.0112  to decimal equivalent. ( 3 marks)

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(b) Perform the following number system conversions. (3 marks)

(i) 342.258 to binary.

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(ii) 50310 to hexadecimal (3 marks)

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(c) (i) Compute the binary arithmetic given below: (3 marks)

10111 + 10001 + 101

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

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