**END TERM EXAMINATIONS – TERM TWO 2023**

**451/1 COMPUTER STUDIES**

**Paper 1**

**FORM 4**

**2- Hours**

**Name**: ………………………………………………….....…… **Adm** **No**: ……….……

**School**: ………………………………………………………….. **Class**: …………………

**Candidate’s** **Signature**: …….………...................................... **Date**: …..…………….

**INSTRUCTION TO CANDIDATES**

* Write your name and index number in the spaces provided above
* This paper consists of **Two** sections **A** and **B**
* Answer **ALL** questions in section **A**
* Answer question16 and any other **THREE** questions from section **B**
* All answers should be written in the spaces provided on the question paper

**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 the questions in SECTION**

1. The principal of a school is concerned that students may be hacking into the exam score database to change their marks. Other than password state three ICT methods that could be used to prevent this from happening **(3marks)**

1. Describe the components of a spreadsheet function (**3marks**)

1. Explain the term prototyping as used in system development **(2marks)**

1. The Director of a private school based in Nairobi has decided that the school magazine will now be included in the school website. Give three reasons why the Director thinks it is a good idea to replace the paper version with a website version **(3marks)**

1. Describe three operational factors the system analyst need to consider in hardware and software requirement during requirement specification phase **(3marks)**

1. Johnson uses a memory stick to transfer her work from school to home. Give three reasons why memory stick are often preferred to CDs for storing work **(3marks)**

1. There are several ways to maintain computer programs during system development life cycle. Describe three ways in which a computer program can be maintained **(3marks)**

1. State three reasons for extensive use of repeaters in Safaricom, Airtel, and Telkom's networks. **(3marks)**

1. Name four Mechanical devices that were used for counting before the electronic computers **(4marks)**

1. Describe two ways of creating text in Microsoft Publisher **(2marks)**

1. Name three benefits accrued from utilizing ICT platforms in industrial systems like Process control **(3marks)**

1. Describe three functions of the antivirus program **(3marks)**

1. A finance company uses cloud storage to archive their accounts. Describe three advantages of using cloud storage platform. **(3marks)**

1. Explain the line of sight principle in data communication (**2marks)**

1. The Kenya Universities and Colleges Central Placement Service (KUCCPS) is a State Corporation that provides career guidance and selects students for admission in Universities and Technical Training institutes. Describe two types of Universities that KUCCPS can place students to pursue undergraduate courses in Kenya **(2marks)**

**SECTION B (60 MARKS)**

1. Give four guidelines a programmer should follow in order to design a good pseudo code **(4marks)**

1. Describe the following looping structures
2. **Repeat.... Until (2marks)**

1. **While.... Do (2marks)**
2. Maranda High school pays casual employees based on the number of hours worked. The payment schedule is as shown below.

* Less than 10 hours @500 per hour
* Up to 15 hours @700 per hour
* More than 15 hours @900 per hour

Write a pseudo code that will prompt the user to key the Name, Number of hours worked and then compute the total wage for five employees (**7marks)**

1. Convert the following numbers to Decimal number system
2. 010011.100012**(3marks)**

1. 36.58 **(3marks)**

1. Evaluate 10102+10102-10012+000102-11012 **(3marks)**

1. Using two complements, show how the arithmetic below would be carried on an 8-bit computer system by subtracting 5010 from 4010 , write your answer in decimal notation. **(4marks)**

1. Describe two reasons for the use of Octal and Hexadecimal number system **(2marks)**

1. Apart from Keyboard and Mouse list any other three input devices found at the Point of sales Terminal **(3marks)**

1. Describe the functions of the components of VR**(3marks)**
2. Glove

1. Body suit

1. Virtual Reality software

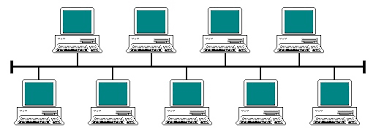
1. Describe four ways in which ICT platforms have improve transport services **(4marks)**

1. Define the term Telecommuting **(2marks)**

1. Give three problems experienced by organizations that use this innovation **(3marks)**

1. Name three Data Terminal Equipment used in a computer network (**3marks)**

1. Use the diagram to answer the questions that follow

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A

1. Identify the topology represented in the above diagram **(1mark)**

1. State the function of the part marked A **(2marks)**

1. Name two limitation of this technology **(2marks)**

1. Name four roles of a Network Administrator **(4marks)**

1. Describe three main pathways in a computer in which components like ALU, Control unit, Register, Buffer Cache, Main memory use to .use to transfer data and instruction between them **(3marks)**

1. A Secretary of a large Non-Governmental organization based in Nairobi was keying data collected from the field. In the first case the secretary keyed in “braek” instead of break then later keyed in 4596 instead of 4569
2. Describe two types of errors illustrated above **(2marks)**

1. State three ways of preventing errors identified in (i) above **(3marks)**

1. State three major limitations of serial file organization **(3marks)**

1. What is normalization in Databases **(2marks)**

1. State three key functions of primary key  **(3marks)**

1. A student created a query using fields from multiple tables, when he clicked on the run command the query did not display the dynaset but instead displayed “Type mismatch error”. Describe the cause of this anomaly**(2marks)**