**TRIAL EXAMINATIONS 2021**

**Kenya Certificate of Secondary Education (KCSE)**

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

**(THEORY)**

**Dec. 2021 – 2 ½ hours**

**Name: ………………………………………..……...… Index No: ……….……………….**

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

**Instructions to candidates**

1. *Write your Name and Index Number in the spaces 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*** *questions in section* ***A***
5. *Answer question 16 and any other* ***three*** *from section* ***B***
6. ***All*** *answers should be written in the spaces provided in the question paper*
7. ***This paper consists of 11 printed pages***
8. *Do* ***not*** *remove any page 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 must answer the questions in English***

**For Examiner’s use only.**

|  |  |  |
| --- | --- | --- |
| **Section** | **Question** | **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*.

1. Identify the transmission mode used when communicating with the devices listed below. (2marks)
2. Public address system

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1. Phone chat via WhatsApp

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1. Describe the evolution of computers based on the following (3marks)
2. Memory capacity

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1. Processing capability

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1. Physical size

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1. Beryl does not understand why computers are said to be Automatic at the same time they have No Intelligent Quotient (IQ) (2marks)

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1. Vero a student from Nyamira Girls lives in a house with full internet access. She spends most of her time on phone and Desktop computer. State any three social issues associated with doing this. (3 marks)

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1. Computers are known to have created jobs to many people. Below are duties and responsibilities of different computer professionals. State the professionals who undertakes the duties and responsibilities listed below. (3marks)
2. Troubleshooting Computer hardware and software related problems

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1. Developing Training Reference materials

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1. Reengineer computer components to enhance its functionality and efficiency

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1. Give three reasons that might have necessitated the development of Second generation computers. (3 marks)

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1. Millicent wrote a program but it did not behave as expected. Describe two types of errors that may hinder the program from running or run but give invalid results. (2marks)

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1. Describe two password options that Ms-Word employ to protect its documents. (2marks)

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1. Mention two limitations of using counterfeit software. (2marks)

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1. Name the computer parts listed below. (2marks)

|  |  |  |
| --- | --- | --- |
| Diagram  | memory ModuleFigure 1 | ProcessorFigure 2 |
| Name  |  |  |

1. Describe the following functions of the operating system. (3marks)
2. Network Management

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1. Security

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1. Interrupt Handling

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1. State three ways in which computer virus infection can be prevented other than through restricting the usage of removable storage media (3marks)

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1. Define the term normalization. (l mark)

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1. State a reason to justify why database administrators usually perform normalization when creating a database for an organization. (2marks)

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1. Mention three factors to consider when choosing a file organization method. (3marks)

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1. What are the four challenges experienced in implementing e-learning in Kenya. (4marks)

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**SECTION B** (60 marks)

*Answer questions 16 and any other three questions from this section.*

1. Describe the following qualities of an algorithm. (2marks)
2. Definiteness

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1. Finiteness

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1. The table below shows the monthly charges applicable to different amount of water consumed by clients in a particular town

|  |  |
| --- | --- |
| Volume of Water consumed in m3 | Consumption in Kshs |
| 0 – 10 | 200 |
| 10 - 20 | 350 |
| 20 – 30 | 500 |
| Over 30 | 1000 |

In addition to the consumption, the amount of the water bill will consist of a standing charge of Kshs 200 and a sewerage fee equivalent to 20% of the consumption.

1. Write a pseudo code for a program that prompts a user to enter the volume of water consumed per month. The program then computes and output the amount of the water bill in a year. (7 marks)
2. Draw a flowchart for the pseudo code. (6marks)

1. The table below is an extract from a spreadsheet use it to answer the questions that follow

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | A | B | C | D | E | F |
| 1 | CustomerNumber | ProductName | Quantity | UnitCost | Total | TypeRemark |
| 2 | 145321 | Malomalo | 20 | 100 | 2000 | Bronze |
| 3 | 143561 | Kisambo | 40 | 200 | 8000 | Silver |
| 4 | 156784 | Weeti | 40 | 400 | 16000 | Gold |
| 5 | 123454 | Wheat | 20 | 50 | 1000 | Bronze |
| 6 | 453218 | Nyozi | 10 | 10 | 100 | Bronze |
|  | GRAND TOTAL | 27100 |  |

1. Identify the Ms-Excel feature that is used in cell A1 and B1 to enable the texts appear the way they are. (1mark)

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1. Name the data type in cell E4 and F3. (2marks)

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1. Use absolute reference to represent a formula that is used to calculate total for wheat (2 marks)

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1. Suggest how named reference can be used to calculate the GRAND TOTAL. (3marks)

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1. Write a formula that will classify product type base on the total as shown in the table below. (2 marks)

|  |  |
| --- | --- |
| Total | Type |
| 0-5000 | Bronze |
| 5001-10000 | Silver |
| 10001 and Above | Gold |

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. State the difference between Cc and Bcc. (2marks)

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1. Mention three factors to consider when choosing an ISP. (3marks)

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1. What is the binary equivalent of $^{12}/\_{32}$ base 10. (3marks)

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1. Determine the Hexadecimal equivalent of 44468. (3marks)

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1. Subtract 110012 from 1910 using twos complement and write your answer in decimal notation. (4marks)

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c) Evaluate 101101101+10101- 1011110. (3marks)

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d) With reference to DTP describe the following terms. (2marks)

1. Gutter

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1. Stroke

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1.
2. State three circumstances under which a system analyst may prefer to use questionnaire instead of observation during facts finding. (3marks)

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1. Mention three operational factors that a system analyst need to consider when sourcing for hardware and software to be used with the proposed system. (3marks)

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1. Describe three advantages of parallel changeover. (3marks)

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1. Define the following terms as used in Networking
2. Ionosphere (1mark)

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1. Line of sight (1mark)

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1. Identify the OSI layer in which the following communication devices operates
2. Router (1mark)

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1. NIC (1mark)

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1. Describe two factors to consider when choosing a transmission media. (2marks)

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1. The following records were entered in a database

|  |  |  |
| --- | --- | --- |
| Date | Class | Registration No |
| 1/1/2007 | East | 1425-A |
| 1/1/2008 | North | 1426-A |
| 12/1/2008 | North | 1426-B |

1. Suggest a validation rule for date given that it should be not before 1/1/2006 (2marks)

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. List the records that will be displayed after running the following criteria? (2marks)
2. <>#1/1/2008 on date

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. 1426-A on class

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1. Write the input mask for registration No (1mark)

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1. Choose the most appropriate data type for Date and Registration No (2marks)

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1. Explain the following terms as used in Word Processing (3marks)
2. Word Wrap

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1. Orientation

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1. Indenting

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1. A Student typed Genge Ni Salima uta Do during a practical lesson. State how the text will appear (5marks)

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