**NAME…………………………………………………..INDEX NO. …………………………**

**SCHOOL………………………………………….…..SIGN: ……………DATE:……………**

451/1

COMPUTER STUDIES

PAPER 1

JULY 2024

2 ½ HOURS

**CHAMPION JET EVALUATION TERM TWO 2024**

**FORM FOUR**

Kenya Certificate of Secondary Education (KCSE)

**Instructions to Candidates**

* Write your Name, Index number and Admission number in spaces provided above.
* This paper consists **TWO** sections.
* Answer **ALL** questions in section **A**.
* Answer Question 16 and any other **THREE** Questions from Section **B**
* All answers MUST be written in the spaces provided on this question paper.

**For Examiner’s Use Only**

|  |  |  |
| --- | --- | --- |
| **Questions** | **Maximum Score** | **Actual Score** |
| **1-15** | **40** |  |
| **16** | **15** |  |
| **17** | **15** |  |
| **18** | **15** |  |
| **19** | **15** |  |
| **20** | **15** |  |
| **TOTAL: 100** |  |

***This paper consists of 13 printed pages***

*Candidates should check to ensure that all pages are printed as indicated and no questions are missing.*

**SECTION A (40 MARKS).**

*ANSWER* ***ALL*** *QUESTIONS IN THIS SECTION*

1. Today, many companies are re-engineering their products to implement the USB connection to the computer. State any **Two** reasons for this. (2 marks)

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2. Explain each of the following terms as used in computing. (3 marks)

(i) Data capture.

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(ii) Data verification

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(iii) Data validation

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3. Many people now use plastic cards to withdraw money from their banks. State **Three** advantages of these cards to the user. (3 marks)

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4. With specific examples explain the difference between each of the following: (4 marks)

(i) Application packages and Utility software.

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(ii)Data privacy and data security

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5(a) what is layering in desktop publishing? (1 mark)

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(b) Why is layering a useful feature in desktop publisher especially when the user is manipulating text and graphic object. (1 mark)

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6. State**Three** risks posed by improper cabling in computer laboratory (3 marks)

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7. State**Two** advantages of laser printer (2 marks)

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8. Give **three** effects of a server crash in a computer networks setup. (3 marks)

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9. Differentiate between a switch and a hub in networking.(2 marks)

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10. State **Two** reasons why organization may opt for in-house software rather than vendor-off-the shelf software (2 marks)

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11 State **Two** characteristics of soft system (**2 mark)**

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12. Explain any**Two** types of errors that are likely to exist in a computer program(4 marks)

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13. State Two ways in which ICT can be used in banks for daily operation (2 marks)

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14. Differentiate between real-time system and online systems. (2marks)

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15. Using **ones** complement, subtract 24 from 29 (4marks)

**SECTION B:(60 marks)**

***Answer question 16 and any other THREE questions in this section.***

16(i) Use the pseudo code below to answer the questions that follows.

START

T=1

READ N

X=1

REPEAT

T=T\*X

X=X+1

UNTIL X=N+1

PRINT T

(a)Use a flowchart to represent the pseudo code shown above(7 marks)

(b)(i)What would the flowchart generate as output if the value of N at input is **5?**Show yourworking (4marks)

(ii) **N=1**

(c)State **Four** rules that should be observed when constructing flowchart (4marks)

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17(a) State**One** application area in computing where real time processing is more appropriate than batch processing stating reason. (2 marks)

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(b)(i)State **Three** reasons most hospitals are changing from manual system to a computer-based system in storing patient records. (3marks)

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(ii) (ii)State any **Three** methods that can be used to organize files on a storage media. (3marks)

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(c) (i)Define the term disk partitioning (1mark)

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(ii)State **Two** advantages of disk partitioning (2marks)

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(iii)Explain why operating system must be installed in the computer before installing any other program on the computer. (2marks)

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(iv)State **Four** resources that are controlled by operating system (2marks)

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18. Information system is known to be the driving force for any organization. The success of any organization depends on the design and implementation of its information system.

1. Explain any **Two** components of an information system (4 marks)

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(b)State **three** benefits of training staff using multimedia training package. (3 marks).

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 (c) Distinguish between the direct and phased changeover strategies (2 marks)

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(d)Describe the systems characteristics listed below:

(i)System entropy (1 mark)

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(ii)The interdependency between subsystems (1 mark)

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(iii) Control. (1 mark)

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(e)State t**hree** reasons that may lead to information system change in an organization. (3marks)

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19. After data has been processed, it is important to keep it somewhere either permanently or semi permanently for future use.

(a)Briefly describe how data is stored/represented on a solid-state storage device. (2 marks)

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1. State any **two** advantages of solid-state storage device. (2 marks)

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1. Distinguish between BCD and EBCDIC coding scheme (2 marks)

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1. Using **Twos**complement subtracts 43.2510 from 18.37510 giving your answer any decimal notation. (5 marks)

(e) Convert 101011.110112to its equivalent hexadecimal number (1mark)

(f) Determine the value of X in the equation; 10011012-X10 (3marks)

20. Study the following spreadsheet extract and follow the questions that follows:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | **A** | **B** | **C** | **D** | **E** | **F** | **G** |
| **1** | **Student name** | **Maths** | **Eng** | **Comp** | **Total** | **Grade** |  |
| **2** | Jane Ndoo | 24 | 22 | 52 |  |  |  |
| **3** | Maureen Kamau | 60 | 17 | 71 |  |  |  |
| **4** | James Kariuki | 24 | 41 | 10 |  |  |  |
| **5** | Mary AnnMuthoni | 52 | 63 | 81 |  |  |  |

1. Write down the formula that can be used to calculate the Total marks of James Kariuki. (2marks)

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(ii) Write down the formula that can be used to calculate the Total marks for students with 50 and above marks in Maths (2 marks)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Write a formula that can be used to count the Total number of students who scored more than 50 marks in computer(2 marks)

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1. Write a formula to sum up the Total marks for the computer students (2 marks)

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1. State the functions that can be used to group and sum up the Total mark for students who scored 24 in mathematics (1 mark)

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(vi) Write down the formula that can be used on cell F2 to grade the students. Use the following grading system. (4 marks)

>=80 A

>=70 B

>=60 C

>=50 D

>=30 E

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

(vii)What is automatic recalculation in spreadsheet? (2 marks)

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