**Name………………………………………………………. ADM No……………………………..**

**School……………………………………………………… Candidate’s Signature………………**

**Date ………………………………….**

**451/1**

**COMPUTER STUDIES**

**(THEORY)**

**Form 3 - Paper 1**

2 ½ Hours

***Kenya Certificate of Secondary Education (K.C.S.E)***

**INSTRUCTIONS TO CANDIDATES**

* Answer all questions in section **A**.
* Answer question 15 (Compulsory) and any other **THREE** questions in section **B.**
* All answers should to be written in the spaces provided in the question paper

**For Official use only.**

|  |  |  |  |
| --- | --- | --- | --- |
| **Section** | **Question** | **Max. Score** | **Candidates Score** |
| A | 1 – 14 | 40 |  |
| B | 15 | 15 |  |
| 16 | 15 |  |
| 17 | 15 |  |
| 18 | 15 |  |
| 19 | 15 |  |
| Total Score |  |  |  |

*This paper consists of 12 Printed pages.*

*Candidates should check the question paper to ensure that all the*

*Papers are printed as indicated and no questions are missing*

**SECTION A (40 MARKS)**

**Answer all the questions in this section**

1. a) Explain the role of the following

i) Computer programmer. (4mks)

………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………

…………………………………………………………………………………………………………

ii) Software engineer (1mk)

……………………………………………………………………………………………………………………………………………………………………………………………………………………

b) i) What is electronic point of sale terminal? (1mk)

……………………………………………………………………………………………………………………………………………………………………………………………………………………

ii) Explain two advantages of using this system. (2mks)

……………………………………………………………………………………………………………………………………………………………………………………………………………………

……………………………………………………………………………………………………………………………………………………………………………………………………………………

iii) Give an application area of this system. (1mk)

……………………………………………………………………………………………………………………………………………………………………………………………………………………

1. Explain the purposes of the following files.

a) Back up (1mk)

……………………………………………………………………………………………………………………………………………………………………………………………………………………

b) Reference (1mk)

……………………………………………………………………………………………………………………………………………………………………………………………………………………

3. a) Perform the following binary arithmetic giving the answer in decimal notation. (2mks)

11101.011 + 111.111

b) State two application areas of virtual reality. (2mks)

……………………………………………………………………………………………………………………………………………………………………………………………………………………

……………………………………………………………………………………………………………………………………………………………………………………………………………………

4. Describe the following human computer interfaces (3mks)

a) Graphical User Interface

……………………………………………………………………………………………………………………………………………………………………………………………………………………

1. Command line Interface

……………………………………………………………………………………………………………………………………………………………………………………………………………………

c) Menu Driven Interface

……………………………………………………………………………………………………………………………………………………………………………………………………………………

5. a) State **three** uses of forms in a database management software (DBMS) (1½ mks)

………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………

b) Explain the terms below as used with databases.

(i) Referential Integrity (1mk)

……………………………………………………………………………………………………………………………………………………………………………………………………………………

(ii) Indexes (1mk)

……………………………………………………………………………………………………………………………………………………………………………………………………………………

6. State the **three** functional parts that make up the CPU. (1½ mks)

………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………

7. You are provided with USB, Parallel and Serial cables. Which of the cables provided can be used to:

a) Support variety of peripheral devices. (1mk)

……………………………………………………………………………………………………………………………………………………………………………………………………………………

b) Transmit data in short distance. (1mk)

……………………………………………………………………………………………………………………………………………………………………………………………………………………

c) Transmit data fast in long distance. (1mk)

……………………………………………………………………………………………………………………………………………………………………………………………………………………

8. The formula, =K20 + P$18 was typed in cell L21 and then copied to cell M24 of spreadsheet. Write a formula as it appears in cell M24. (2mks)

……………………………………………………………………………………………………………………………………………………………………………………………………………………

……………………………………………………………………………………………………………………………………………………………………………………………………………………

9. Distinguish between logical and physical files as used in computer. (2mks)

……………………………………………………………………………………………………………………………………………………………………………………………………………………

……………………………………………………………………………………………………………………………………………………………………………………………………………………

10. Tea processing zone wants to acquire new software,

a) State **three** items that should accompany the software (1½ mks)

………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………

b) State **three** purpose of word processing package. (1½ mks)

………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………

11. Give **two** differences of high and low level languages (2mks)

………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………

…………………………………………………………………………………………………………

12. Define terms below

a) Nibble (1mk)

……………………………………………………………………………………………………………………………………………………………………………………………………………………

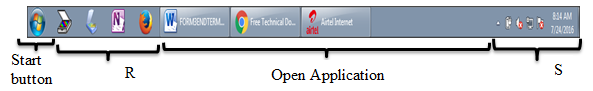
b) Bit (1mk)

……………………………………………………………………………………………………………………………………………………………………………………………………………………

c) Word (1mk)

……………………………………………………………………………………………………………………………………………………………………………………………………………………

13. The diagram below represents a task bar. Use it to answer the questions below.



a) Name the part labeled

(i) R …………………………………………………………………… (½ mk)

(ii) S …………………………………………………………………… (½mk)

b) Explain the difference between R and S (1mk)

……………………………………………………………………………………………………………………………………………………………………………………………………………………

14. a) Name any **two** examples of electronic data processing modes (1mk)

……………………………………………………………………………………………………………………………………………………………………………………………………………………

b) Explain safety precaution in computer safeguarding

(i) Hardware (1mk)

……………………………………………………………………………………………………………………………………………………………………………………………………………………

(ii) Loss of computer programs (1mk)

……………………………………………………………………………………………………………………………………………………………………………………………………………………

**SECTION B: 60MARKS**

**Answer question 15 and any other three questions from this section.**

15. a) Define the terms below

i) Algorithm (1mk)

……………………………………………………………………………………………………………………………………………………………………………………………………………………

ii) Pseudo code (1mk)

……………………………………………………………………………………………………………………………………………………………………………………………………………………

iii) Flowchart (1mk)

……………………………………………………………………………………………………………………………………………………………………………………………………………………

b) Draw a flowchart to compute the result of the following formula (5mks)

c) Write a pseudo code for a flowchart in b(above) (5mks)

d) Describe the difference between the **While** and **Repeat..Until** loops (2mks)

……………………………………………………………………………………………………………………………………………………………………………………………………………………

……………………………………………………………………………………………………………………………………………………………………………………………………………………

1. You are provided with the following entries in the spreadsheet.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | A | B | C | D | E | F | G |
|  |  | Months | | | |  |  |
| 1 | Items | Jan | Feb | Mar | April |  |  |
| 2 | Shoes | 500 | 500 | 500 | 500 |  |  |
| 3 | Pencils | 400 | 300 | 600 | 700 |  |  |
| 4 | Books | 100 | 200 | 150 | 350 |  |  |
| 5 | Ruler | 900 | 760 | 350 | 102 |  |  |
| 6 | Rubber | 60 | 80 | 200 | 450 |  |  |

a) State the cell data type represented by

i) Cell A4 (1mk)

……………………………………………………………………………………………………………………………………………………………………………………………………………………

ii) Cell C 4 (1mk)

……………………………………………………………………………………………………………………………………………………………………………………………………………………

iii) Explain the difference between cell A4 and C4 (1mk)

……………………………………………………………………………………………………………………………………………………………………………………………………………………

b) Provide a formula for cell E5 that can be used to give 10% increase of cell E5 (2mks)

……………………………………………………………………………………………………………………………………………………………………………………………………………………

……………………………………………………………………………………………………………………………………………………………………………………………………………………

c) Using **COUNTIF function,** write an expression to determine the number of items greater than 300 in the month of January (2mks)

…………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………

d) Explain two reasons why

* 1. Hypertext markup language is not a true programming language. (2mks)

……………………………………………………………………………………………………………………………………………………………………………………………………………………

ii) State three examples of web scripting language. (3mks)

………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………

e) Differentiate between **source program** and **object code** as used in programming. (1mk)

……………………………………………………………………………………………………………………………………………………………………………………………………………………

(f) Explain the concept of modular programming and give **one** advantage associated with it. (2mks)

……………………………………………………………………………………………………………………………………………………………………………………………………………………

……………………………………………………………………………………………………………………………………………………………………………………………………………………

17. a) i) Explain **two** advantages of acquiring micro-computers in schools (2mks)

……………………………………………………………………………………………………………………………………………………………………………………………………………………

………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………….

ii) Describe any three types of computational errors. (3mks)

…………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………

iii) Explain the term data integrity. (2mks)

……………………………………………………………………………………………………………………………………………………………………………………………………………………

……………………………………………………………………………………………………………………………………………………………………………………………………………………

b) Distinguish between:

i) Data encryption and passwords. (1mk)

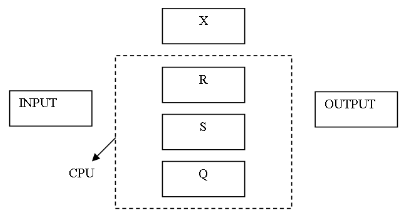
…………………………………………………………………………………………………………

…………………………………………………………………………………………………………

ii) Dry run and walk through (1mk)

……………………………………………………………………………………………………………………………………………………………………………………………………………………

1. The diagram below represents essential features of a computer system. Study the diagram and answer the question the follows:



i) Name the components

X ………………………………………………………………….

R ……………………………………………………………………

S …………………………………………………………………….

Q …………………………………………………………………… (4mks)

ii) In the diagram above indicate the direction of data flow using arrows. (2mks)

18. a) i) What is multimedia? (1mk)

……………………………………………………………………………………………………………………………………………………………………………………………………

ii) State two examples of multimedia system. (2mks)

……………………………………………………………………………………………………………………………………………………………………………………………………………………

……………………………………………………………………………………………………………………………………………………………………………………………………………………

b) Firestone Kenya purchased hardware components from World Computer services, Firestone

Kenya later demanded a document of warranty.

i) What is a warranty? (1mk)

……………………………………………………………………………………………………………………………………………………………………………………………………

ii) Describe three important information that may entail in the warranty. (6mks)

……………………………………………………………………………………………………………………………………………………………………………………………………………………

……………………………………………………………………………………………………………………………………………………………………………………………………………………

……………………………………………………………………………………………………………………………………………………………………………………………………………………

c) Give three examples of special purpose memories found in the central processing unit. (3mks)

……………………………………………………………………………………………………………………………………………………………………………………………………………………

……………………………………………………………………………………………………………………………………………………………………………………………………………………

……………………………………………………………………………………………………………………………………………………………………………………………………………………

d) Explain difference between read and write with reference to computer memory. (2mks)

……………………………………………………………………………………………………………………………………………………………………………………………………………………

……………………………………………………………………………………………………………………………………………………………………………………………………………………

19. a) Explain how the operating system perform the following:

i) Job sequencing (2mks)

……………………………………………………………………………………………………………………………………………………………………………………………………………………

……………………………………………………………………………………………………………………………………………………………………………………………………………………

ii) Job scheduling (2mks)

……………………………………………………………………………………………………………………………………………………………………………………………………………………

……………………………………………………………………………………………………………………………………………………………………………………………………………………

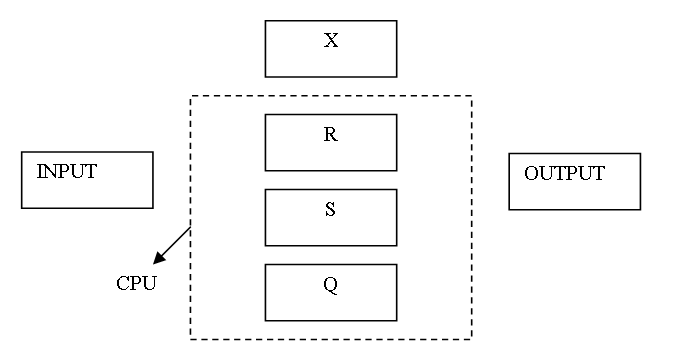
b) With use of examples describe types of desktop publishing software. (4mks)

……………………………………………………………………………………………………………………………………………………………………………………………………………………

……………………………………………………………………………………………………………………………………………………………………………………………………………………

……………………………………………………………………………………………………………………………………………………………………………………………………………………

……………………………………………………………………………………………………………………………………………………………………………………………………………………

 c) Define the terms below

i) Chatting (1mk)

……………………………………………………………………………………………………………………………………………………………………………………………………………………

ii) Website (1mk)

……………………………………………………………………………………………………………………………………………………………………………………………………………………

iii) Search engine (1mk)

……………………………………………………………………………………………………………………………………………………………………………………………………………………

1. Explain the effect of information technology in:

i) Employment (2mks)

……………………………………………………………………………………………………………………………………………………………………………………………………………………

……………………………………………………………………………………………………………………………………………………………………………………………………………………

ii) Environment (2mks) ……………………………………………………………………………………………………………………………………………………………………………………………………………………

……………………………………………………………………………………………………………………………………………………………………………………………………………………

This is the last printed page. Good luck