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

**SCHOOL………………………………………………… CANDIDATE’S SIGNATURE…………...**

 **DATE ………………………………………**

**451/1**

**COMPUTER STUDIES**

**PAPER 1 (THEORY)**

**OCTOBER/NOVEMBER 2013**

**TIME: 2 ½ HOURS**

**KATHIANI DISTRICT FORM THREE END OF YEARN JOINT EXAMINATION**

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

**451/1**

**COMPUTER STUDIES**

**PAPER 1(THEORY)**

**OCTOBER/NOVEMBER 2013**

**TIME: 2 ½ HOURS**

**INSTRUCTIONS TO CANDIDATES**

* This paper consists of TWO sections A and B
* Answer all questions in section **A**.
* Answer question 16 (Compulsory) and any other **THREE** questions in section **B.**
* All answers should be written in the spaces provided in the question paper

 **FOR EXAMINER’S USE ONLY.**

|  |  |  |  |
| --- | --- | --- | --- |
| **Section** | **Question** | **Max score** | **Candidates Score** |
| A | 1 – 15 | 40 |  |
| B | 16 | 15 |  |
| 17 | 15 |  |
| 18 | 15 |  |
| 19 | 15 |  |
| 20 | 15 |  |
| **Total Score** |  |  |  |

This paper consists of 8 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 questions in the section**

1. State three classifications of microcomputers when classified according to the size. (3 marks)

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

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

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

2. List down four features of user friendly program. (2 marks)

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

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

3. (a) Explain why an impact printer is suitable for printing of multiple copies. (2 marks)

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

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

 (b) State two advantages of a laser printer over inkjet printers. (2 marks)

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

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

4. Distinguish between DRAM and SRAM memories. (2 marks)

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

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

5. (a) State and explain one type of computer processing file. (2 marks)

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

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

 (b) List three file organisation methods. ( 3 marks)

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

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

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

6. State two ways in which your school librarian can use a computer. (2 marks)

7. Explain what the following DOS commands achieve when executed.

 (i) C:\ DIR P \*.EXE (1mark)

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

 (ii) A:\> FORMAT (1 mark)

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

8. State three ways in which computer users can minimize repetitive strain injury (RSI) (3 marks)

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

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

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

9. (a) Name any two types of non-printable guides in DTP. (1mark)

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

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

 (b) Explain the functions of each of non-printable guides named in 9 (a) above. (2 marks)

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

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

10. Mr. Musyoka computer technician in one of the schools used speech method to store students’ oral

 answers into a computer.

1. What is a speech input? (1 mark)

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

1. State two advantages and one disadvantage of using this kind of input. (3 marks)

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

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

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

11. Explain the following computer mouse terminologies. (2 marks)

 (a) Clicking

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

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

1. Double clicking

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

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

12. (a) What is an analogue device? (1 mark)

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

 (b) Give two examples of analogue computers. (1mark)

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

13. (a) What is a deadlock? (1mark)

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

 (b) Differentiate between a program file and a data file. (1mark)

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

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

14. Give two reasons for partitioning a disk. ( 2 marks)

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

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

15. Draw a diagram to illustrate the following.

 (i) USB port (1mark)

 (ii) Serial port (1mark)

**SECTION B – 60 MARKS)**

**Answer question 16 and any other three questions from this section in the spaces provided**

16. Pangani School is an organization and its pays its employees according to the following information

 below.

 Each employee has a basic pay, Taxation is carried out as follows:

 Basic pay equal to or less than KSh. 5000 tax rate is 10%

 Basic pay between KSh. 5000 and KSh. 7000 the tax rate is 20%

 Any basic pay equal to or over KSh. 7000 attracts a tax of 40%

 Each employee must contribute 5% of basic income to the Pension Scheme payments are done monthly

1. Using a flow chart diagram, design a program that would read an employee name, basic salary; the program should also display each employee’s basic salary, net salary and total deductions. (10 marks)

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

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

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

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

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

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

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

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

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

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

1. Using the above diagram, write a pseudo code that should prompt the user to input the employee name, basic pay and compute the employee net salary. (5 marks)

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

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

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

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

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

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

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

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

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

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

17. (a) Carry out the following arithmetic in twos complements. (4 marks)

 (i) 4810 – 1410

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

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

 (ii) Convert 0.37510 into binary form. (2 marks)

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

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

 (iii) Perform the following arithmetic in binary notation 10110000112 + 1112

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

 (iv) Using the ones complement, calculate 3110 – 1710 in binary form (4 marks)

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

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

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

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

(b) Explain the meaning of the following terminologies as used in data security and control. (3 marks)

 (i) Fire wall

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

 (ii) Log file

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

 (iii) Encryption

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

(c) A head teacher keeps the following details in a database.

 Name, Address, Town, Date of Birth, Marks scored, Fees paid, Student ID.

 Name the most appropriate primary key for the above record. Give a reason. (1mark)

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

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

18. (a) Differentiate between a formula and a function as used in Excel. (2 marks)

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

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

 (b) What is the effect of the following function?

 COUNTIF (A5:D5, “orange”) (2 marks)

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

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

 (c) The first column in the table below contains the formula stored in a cell of a spreadsheet.

 Enter the formula as they would appear when copied to cell F15 of the same spreadsheet. (3 marks)

|  |  |
| --- | --- |
| **FORMULA IN C10** | **FORMULA IN F15** |
| = A56 \* B5 |  |
| = A & 5 |  |
| = 4 \* B S 6 |  |

 (d) (i) Explain the concept of distributed databases. (2marks)

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

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

 (ii) State **two** advantages of distributed databases. (2 marks)

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

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

 (e) Outline **two** uses of forms in databases design (2 marks)

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

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

(f) List any two spreadsheet programs (2 marks)

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

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

 (g) (a) Give provisions in Kenya laws governing and protecting our information. (3 marks)

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

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

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

(b) Identify and explain three security threats on ICT (3 marks)

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

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

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

(c) List three features of electronic mail. (3 marks)

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

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

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

(d) Outline three short comings of the internet. (3 marks)

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

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

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

(e) List three internet connectivity requirements. ( 3 marks)

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

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

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

20. (a) Name two ways by which operating systems are classified. ( 2 marks)

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

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

 (b) Distinguish between (i) formatting a disk and partitioning a disk. ( 2 marks)

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

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

(i) File and a folder

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

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

 (ii) System file and application file (2 marks)

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

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

1. List down four functions of an operating system. (4 marks)

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

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

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

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

1. Outline two factors you would consider if you were to buy an operating system. (2 marks)

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

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

1. Why must an operating system be installed in the computer before installing other software? (1 mark)

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

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