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

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

 **DATE ………………………………………**

**451/1**

**COMPUTER STUDIES**

**PAPER 1 (THEORY)**

**TIME: 2 ½ HOURS**

***NOVEMBER 2021 EXAMINATIONS***

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

**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)

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

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

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

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

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

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

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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)

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

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

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

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

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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)

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

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

 (a) Clicking

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1. Double clicking

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

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

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

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

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

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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)

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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)

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

 (i) 4810 – 1410

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

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

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

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

 (i) Fire wall

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 (ii) Log file

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 (iii) Encryption

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(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)

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

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

 COUNTIF (A5:D5, “orange”) (2 marks)

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 (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)

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

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

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

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

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

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

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

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

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

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

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

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

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(i) File and a folder

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

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

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

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

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