NAME…………………………………………………. ADM NO. ………………...…

SCHOOL ………………………………………………… SIGN …………..….…….……

DATE………………………..

451/1
COMPUTER STUDIES
Paper 1
(THEORY)
AUGUST 2022
2 ½ Hours

LAIKIPIA EAST TERM 2 2022 FORM 4 EVALUATION EXAM
Kenya Certificate of Secondary Education – K.C.S.E

451/1
COMPUTER STUDIES
Paper 1
(THEORY)
AUGUST, 2022
2 ½ Hours
 INSTRUCTION TO CANDIDATES

- This paper consists of **two** sections: **A** & **B**.
- Answer **all** the questions in section **A**.
- Answer question **16** and any other **three** questions from section **B**.

FOR EXAMINERS USE ONLY

SECTION	QUESTION	CANDIDATE SCORE
A	1 – 15	
B	16	
	17	
	18	
	19	
	20	
Total Marks		

This paper consists of 12 printed pages. Candidates should check the question paper 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. For each of the following generation of computers. State the technology used to control internal Operations. (2mks)

    (i)   1st Gen...

    (ii)   2nd Gen ....

    (iii)   3rd Gen..

    (iv)   4th Gen..

2. Explain the control structures given below:

    (a)   Sequence   (1mk)

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    (b)   Selection   (1mk)

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    (c)   Iteration   (1mk)

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3. Distinguish between cold and warm booting.   (2mks)

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4. a)   Define Word processing.   (1mk)

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    (b)   Explain the following word processing features.   (1mk)
    (i)   Word Wrap

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    ....

    (ii) Template

    ....

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5. Explain the meaning of the following terms:
    (a)   Encryption   (1mk)
    ....

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(b) Eavesdropping   (1mk)

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6. Convert 842_{10} to hexadecimal.   (2mks)

7. State under which category of keyboard keys the following keys would fall.

(i) | T |

.... (1mk)

(ii)

| F_2 |

.... (1mk)

8. Choice of a programming language is very important during computer systems development. Based on this statement, explain the following languages.

(a) Machine Language   (1mk)

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b) High level language   (1mk)

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9. Explain the meaning of the terms below as used in data communication.

(i) Attenuation   (1mk)

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(ii) Multiplexing   (1mk)

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10. While purchasing computers for his school, the Principal of Matopeni High school preferred a 6 months warranty option other than that of 1 year from the selling company. List TWO factors that might have led him to do so. (2mks)

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11. (a) A worksheet contains data as shown below

Cell	A1	A2	A3	A4	A5	A6
Entry	75	50	62	84	42	

Write the formula to be entered inn cell A6 to display the sum of values above 60. (2mks)

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(b) Explain the following disk management activities
(i) Disk Defragmentation (1mk)

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(ii) Disk Partitioning (1mk)

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(iii) Disk Scanning. (1mk)

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12. Study the diagram below and answer questions that follow:

(a) Identify the port shown in the diagram. (1mk)

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(b) Give TWO reasons why the identified port in 12(a) above finds widespread use in computer systems. (2mks)

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13. (a) What is data communication? (1mk)

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(b) List THREE advantages of fibre optic cables. (3mks)

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14. Carry out the following arithmetic in twos complement.　　　　　　　　(3mks)

$48_{10} - 12_{10}$

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15. (a)　Name the stage of systems development life cycle where questionnaires are use. (1mk)

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(b)　State ONE advantage and ONE disadvantage of using questionnaires at the stage
In 15 (b) above.

(i)　Advantage　　　　　　　　　　　　　　　　　　　　　　　　　　(1mk)

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Disadvantage　　　　　　　　　　　　　　　　　　　　　　　　　　(1mk)

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Answer question 16 and any other THREE questions from this section.

16. (a) Define the following terms as used in programming. (3mks)

(i) Array

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(ii) Pseudo code

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(iii) Algorithm

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(b) State the output of the flowchart below. (4mks)
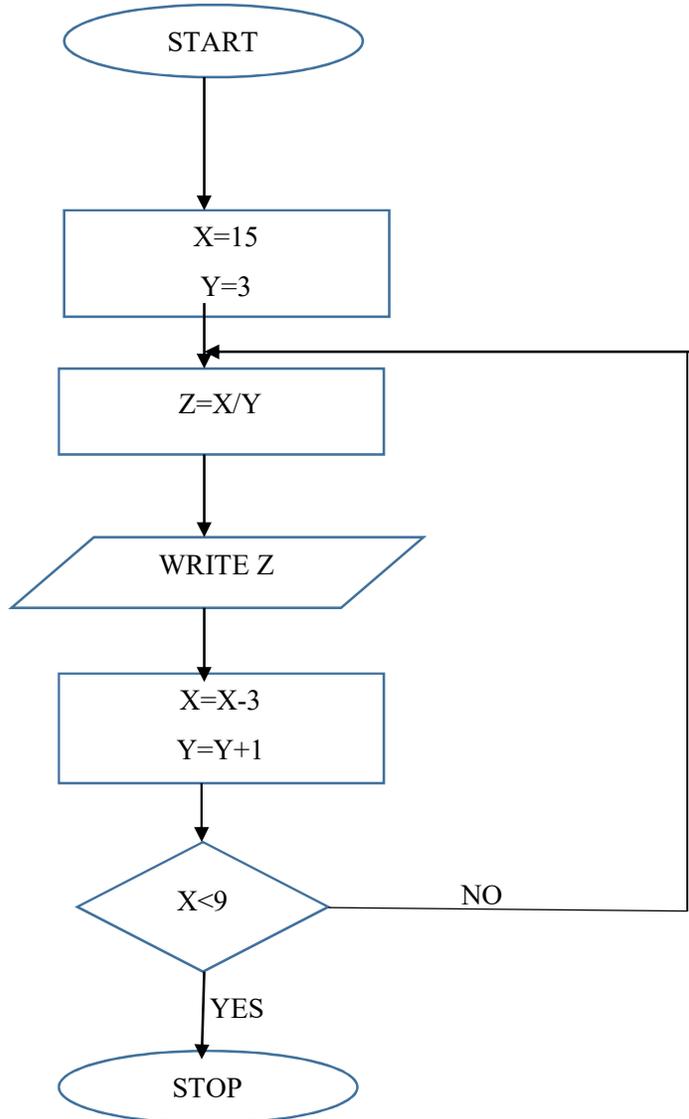
(c)   Draw a flowchart for designing a program which enables a   man to work out the cost of covering the floor of his house with carpet tiles. Data   is supplied as follows:

(i)   The number of rooms in the house equals to five

(ii)   For each room;
       - The size of a tile (SOT) and cost of a tile (COT) to be used in that room
       - The length (L) and breadth (B) of the room

For each room, calculate the number of tiles (NOT) required as well as the cost (cost) of the tiles.
Print the total cost (TL cost) of tiles required.   (8mks)

17. (a) What is a Uniform Resource Locator? (1mk)

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(b) Using well labeled diagrams, explain star, bus and ring network topologies. (9mks)

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(c) (i) Differentiate between logical and physical files (2mks)

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(ii) Explain the following data processing files. (3mks)

(a) Master file

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(b) Transaction file

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(c) Backup file

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18. (a) Explain the terms as used in database. (3mks)

(i) Primary key

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(ii) Entity

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(iii) Record

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(b) Computers process digital data gotten through a process called coding. State and explain **THREE** coding systems. (6mks)

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(c) Describe **THREE** computer crimes taking place in society citing control measures that can be put in place to curb them. (6mks)

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19. (a) Define virtual reality (1mk)

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(b) Explain the following interactive sensory equipment used in virtual reality.

(i) Head gear (2mks)

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(ii) Body suit (2mks)

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(c) (i) What is artificial intelligence? (1mk)

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(ii) State and explain **THREE** components of an expert system. (6mks)

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(d) Most computerized security systems make use of biometric analysis. Name Physical features of human being that can be considered for this analysis. (3mks)

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20. (a) Define an information system. (1mk)

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(b) State **TWO** circumstances under which interviews may be used as a method of gathering information (2mks)

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(c) (i) What is a computer laboratory? (1mk)

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(ii) Give **TWO** measures that should be observed when using the computer

laboratory to protect computers against loss of data

(2mks)

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(d) (i) State **THREE** factors you would consider before enrolling for an ICT Course in an institution of higher learning. (3mks)

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(ii) Give **TWO** duties of each of the following computer professionals. (6mks)

(a) Computer Programmer

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(b) Systems Analyst

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(c) Web Administrator

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