NAME:.....**INDEX NO:**.....

SCHOOL.....

451/1
COMPUTER STUDIES
PAPER 1
THEORY
JULY / AUGUST 2014
TIME 2 ½ HOURS.

THE 2014 KCSE LAMU COUNTY MOCK EXAMINATION

Kenya Certificate of Secondary Education

COMPUTER STUDIES
PAPER 1
THEORY
JULY /AUGUST 2014

INSTRUCTION TO CANDIDATES

- Write your name and index number in the spaces provided above
- *This paper consists of **two** sections **A** and **B**.*
- *Answer **ALL** questions in section **A**.*
- *.Answer question 17 and any other THREE questions from section B.*
- *All answers should be written in the spaces provided on the question paper.*

For Examiners Use Only

Section	Questions	Candidates Score
A	1-16	
B	17	
	18	
	19	
	20	
	21	
	TOTAL SCORE	

SECTION A (40 MARKS)

1. **Define** the following word as used in computing

   a) Analogue data (1 mark)

   (b) Digital data (1 mark)

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2. **Outline three** advantages of having a network in your work area. (3 marks)

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3. **Differentiate** between real data type and an integer data type as applied in programming (1 mark)

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4. **State four** functions of an uninterruptible power supply . (2 marks)

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5. **Describe** the meaning of the following words as used in information communication technology (3 marks)

   i) Protocol

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   ii) Gateway

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   iii) Bandwidth

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

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7. **Give four** application areas of a computer output on microforms (4 marks)

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8. Majority of people withdraw cash by using A.T.M. **List down three** input and output devices of an A.T.M machine at pesa - point in our country

i) Input devices (1½ marks)

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ii) Output devices (1½ marks)

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9. **Distinguish** between a compiler and interpreter (2 marks)

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10. **Explain two** reasons why computer uses binary numbers in data representation. (2 marks)

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11. **List four** types of courses in information communication technology offered at degree level in Kenya (2 marks)

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12. **State four** responsibilities of computer trainer (4 marks)

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13. **Differentiate** between filtering and sorting data as used in spreadsheet. (2 marks)

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14. Convert the following into binary

(i) $1\ C\ D_{16}$ (2 marks)

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(ii) 150_{10} (2 marks)

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15. (a) By defining the following abbreviations **write down** what they stand for in full. (2 marks)

(i) RISC

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(ii) POST

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16. **Distinguish** between cold booting and warm booting as used in computer.
(2 marks)

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SECTION B (60 MARKS)

Answer question 16 and ANY other THREE Questions from the section

17. (a) (i) **Outline two advantages** and **one disadvantages** of low –level programming language. (3 marks)

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(ii) By use of a flow chart diagram show the process of reading any amount in dollars and convert it into Ksh. Write a program code using high level language. The display should be Kenya shillings and cents. Exchange rate Ksh. 65 to 1 dollar. (12 marks)

(b) **Give four** advantages of a computerized filing system. (4 marks)

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c) **Briefly explain** the **three** elements that make a computer file (6 marks)

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d) **Write short** descriptions of the following computer processing files. (3 marks)

i) Master file

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ii) Reference file

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iii) Back- up file

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e) **Distinguish** between sequential and serial file organization methods (2 marks)

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18. (a) **Define** what virtual reality (V.R) means (2 marks)

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(b) **List five** application areas of a virtual reality (5 marks)

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c) **Give five** reasons why an industry may opt to use robot (5 marks)

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(c) **List** the four major interactive sensory parts of virtual reality equipment.
(2 marks)

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(d) **Define** the word robot (1 mark)

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19. (a) By using a well labelled diagram explain on how the abacus machine was used for counting numbers.
i) Diagram (5 marks)

ii) Explanation (5 marks)

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(b) **State five** characteristics of the third generation computers. (5 marks)

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20. (a) **Give five** provisions in Kenya laws in governing and protecting our information (5 marks)

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(b) **Identify** and **explain four** security threats on ICT (8 marks)

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(c) **List four** features of Electronic mail (2 marks)

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THE 2014 K.C.S.E LAMU COUNTY MOCK EXAMINATION
FORM FOUR MOCK EXAMINATION
COMPUTER STUDIES PAPER 1 MARK SCHEME

- **This marking scheme is an aid to teachers and students to indicate the requirements of the examination. It shows the basis on which examiners are instructed to award marks.**

- **All examiners are instructed that alternative correct answers and unexpected approaches in candidates' scripts must be given marks that fairly reflect the relevant knowledge and skills demonstrated.**

1. (a)It's data that is in continuous version (1mk)
   (b) Signal that is in discreet version (1mk)
2. - Distributed processing facilities
   - Cost effectiveness and reliability
   - Resource sharing
   - Remote communication

   (1x3)=3mks)
3. Real data type has a fraction integer data type is a whole number (1mk)
4. - Provide power incase of power failure
   - Regulates power from an unstable power source
   - Prevents electrical surges
   - A alert the user when power goes off (each ½ mk)

5. (i) Protocol – set of rules that govern how two or more computers can send and receive data in a network (1mk)
   (ii) Gateway –Any device that can be configured to provide access to wide area networks or Internet.
   (ii) Bandwidth – Maximum amount of data that a transmission medium can carry at any one time (1mk)

6. – offers help to the user
   - doesn't keep the user for long without explanation
   - Meet all user's requirements
   - Free from bugs (each ½ mks)

7. –Storing data base in criminal investigation center
   - In government ministries
   - Keeping town plans
   - Banks
8. Input device
   - Key board
   - Card
   - Document reader (each ½ mks)

   Output devices

- Screen / monitor
- Printer
- Light emitting diode (LED)
- Voice output e.g. speaker (each ½ mks)

9. – Compiler translates the entire source program into object
   - Interpreter translates the source program line –by-line allowing CPU to execute one line before translating the next (2mks)
10. – Easy to develop devices that can understand it than natural language
    - Simplifies technology needed to develop both hardware and software
    - Digital devices are reliable
    - Digital devices are small in size
    - They are less energy (any two of above 2 marks)

11. – Bachelor of science in computer Engineering
    - Bachelor of science in Computer science
    - Bachelor of ICT /system
    - Degree in software engineer
    - Degree in programming
12. - Training people how to use computers and various programs
    - Advising learners the best career opportunities
    - Preparing learners for ICT examination
    - Developing training reference materials
    - Guide learners how to acquire knowledge through research. (4x1=4mks)
13. - Sorting – Arrangement of data in descending or ascending order.
    - Filtering is Hiding of column and in worksheet (2mks)
14. $(i)\ \ ICD_{16} = 0001110011\ 01_2$

    $(ii)\ 150_{10} = 10010110_{\ 2}$ (2x2=4mks)

15.
    a) i) RISC – Reduces instruction set computer Type of microprocessor that recognizes limited number of instruction
    (1mk)
    ii) POST – Power – on self test
    - The system used to check all components connected to computer weather they are function
    (1mk)

    b) – Cold booting occurs when computer originally is off and switched on by pressing the power button. (1mk)

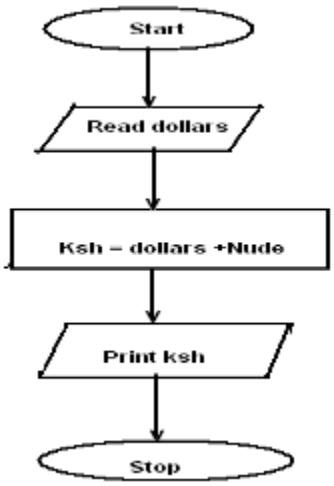
    - Warm booting happens when originally computer was on i.e. forced to restart by pressing the restart button, use of restart command or by pressing combination of keys on a keyboard.
    (1mk)

SECTION B 60 MARKS

16. Advantages
    - Easy to be understood by the computer
    - Require little effort translate into computer under stable from. (2x1= 2mks)

    Disadvantages
    - They are hand wave oriented
    - They are not portable
    (1x1=1mk)

    b) Flow chart



Each symbol (5x1=5mks)
Programs Errors = (1mk)
Program conversion dollars into Ksh;
Constant & = 20 Ksh
VAR
Dollars: Real
Shillings: Real
Write in (conversion of dollars into Kshs)
Read in (Dollars)
Shillings = Dollars Const &
Write in (Kenyan shillings is; shillings);
END (Each step ½ mks)

17. – offers faster access and retrieval of data.
- Information takes up less space than manual filing
- Enhances data integrity and reduces duplication
- Easier to update and modify information
(4x1=4mks)

b) (i)Characters
- The smallest element in computer file can be a letter number or symbol
- Made up of a set of seven or eight bits depending on character coding system used.
(1x2 =2mks)

(ii) Fields
- Single character or collection of character
- Represent single piece of data e.g. in students records, students admission no is a field.
(1x2=2mks)

(iii) Records
- Collection of related fields
- Represents single entity
(1x2mks)

c) i) Master file
- Main file contains permanent records of particular Items or entries (1x1=1mk)

ii) Reference file
- Store relatively permanent records read from the master file or generate after processing.
(1x1=1mk)

iii) Backup file
- Used for holding copies of data or information. (1x1=1mk)

d) Sequential file
- Records are stored and accessed in particular order sorted using a key field.
- Retrieval requires searching through the entire file by record received from the start to the end.
(1x1=1mk)

Serial file

- Records are stored and accessed one after another.
- Records are not sorted in any way on storage devices.
- Mostly used in magnetic tapes(1x1 =1mark)

18. a) Condition in which a person becomes psychologically immersed in an artificial environment generated by a computer system (2 mks)

b) Entertainment

- Simulation and assembly of sequences
- Three dimensional objects or ideals
- Training

-Assistance to the handicapped. (1x5=5mks)

c) – Difficult areas to be handle by human

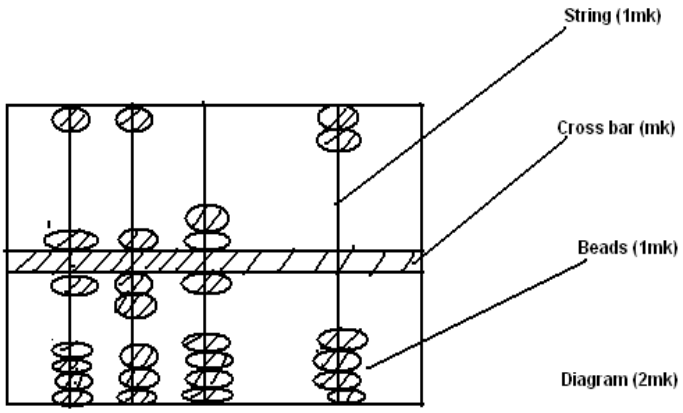
- Avoid boredom to human in repetitive jobs
- increase production
- Dangerous areas to human
- Satisfy their customer

d) Head gear /Head mounted display

- Gloves
- Body suite
- Virtual reality software. (½ x4 =2mks)

e) Use of device that imitates human being in carrying out tasks that would be dangerous and difficult to human (1mk)

19.



Explanation

- String represent place values of numbers (1mk)
- Upper beads are two each representing five (1mk)
- Lower beads have five each representing unitary (1mk)
- Each string represented place value of number (1mk)
- Sliding of beads on a frame (1mk)

NB (Consider student's explanation)

b) Characteristics of 3rd generation

- Generated less heat compared to 2nd generation
- Consumed a lot of power compared to 2nd generation
- Used integrated circuit technology (1x5=5mks)

20.

- Data and information should be kept secure against loss or exposure.
- Data should not be transferred to other countries without the owner's permission.
- Data and information should not be kept longer than necessary.
- Data and information should be accurate and up to date.
- Data and information be collected used and kept for specified lawful purposes

b) i) Viruses

- Destructive programs that attaches itself to other files and installs itself without permission on the computer when files are opened (1x2=2mks)

ii) Unauthorized access

- Gaining access to data /information without permission (1x2=2mks)

iii) Computer error and accidental access

- Caused by people making mistakes like printing sensitive report an unsuspectingly giving then to unauthorized person's (1x2=2mks)

(iv) Theft

- Stealing of data and information to gain a fortune from it (1x2=2mks)

c) – checking mails

- compose message
- send mail
- Saving messages
- Printing mails
- Forwarded messages

(1x2=2mks)