NAME: .... ADM NO.: ....

CANDIDATE'S SIGNATURE: .... DATE: ....

COMPUTER STUDIES (451)
FORM 2 MID-TERM C.A.T
Theory
JUNE - 2018
Time: 2 ½ HOURS

FⱰCUS A365

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ST CLARE GIRLS HIGH SCHOOL – GATUNDU

Kenya certificate of secondary education (K.C.S.E)

Answer All Questions Provided in This Question Paper *[100 marks]*

1. State **three** Computer Laboratory precautions and measures necessary to protect computers

   from damage *[3 marks]*

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

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

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

2. Describe the following computer words: *[3 marks]*

   a. Artificial Intelligence;

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

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

   b. Liveware;

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

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

   c. Booting;

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

3. State any **five** uses of computers in the following areas;

   a. Government Offices *[5 marks]*

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   ………
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   ………

   b. Military *[5 marks]*

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4.
   a. State **two** reasons why the keyboard is categorized as an input device. *[2 marks]*

   ………
   ………

   b. Other than the keyboard, list any other **three** input devices. *[3 marks]*

   ………
   ………
   ………

5. State **three** differences between first generation and fifth generation computers. *[3 marks]*

   ………
   ………
   ………
   ………

6. State input/output devices that can do the following tasks. *[6 marks]*

    A. Enter voice data into a computer   …………………………

    B. Enter text data into a computer directly   …………………………

    C. Display all happenings in the computer chassis   …………………………

    D. Control the cursor on the computer screen   …………………………

    E. Enter text data into a computer through typing   …………………………

    F. Enter data into a computer in form of graphics   …………………………

7. State the **three** categories of microcomputers *[3 marks]*

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8. Give **three** reasons why computers should be shut down after use. *[3 marks]*

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9. State **three** reasons why a mobile phone is regarded as a computer. *[3 marks]*

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10. Name the processing technology that was used to develop the following generations of

computers. *[3 marks]*

    a. Second generation ……………………………..

    b. Third generation ……………………………………

    c. Fifth generation …………………………………….

11. State **four** reasons why smartphones and tablets are more popular than desktops and laptops in the current world *[4 marks]*

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12. List any **four** reasons why the study of *'The Computer Laboratory'* is essential in the study of computer studies as a subject. *[4 marks]*

a. …………………………………………………………………………………………………

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b. …………………………………………………………………………………………………

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c. …………………………………………………………………………………………………

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d. …………………………………………………………………………………………………

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13. State the use of the following keys of the keyboard; *[5 marks]*

a. Menu key

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b. Insert key

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c. Home key

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d. Del key

……….....

e. Print Screen key

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14. Match the table below appropriately. *[5 marks]*

Device	Uses
Light pen	Capturing cheque marks in a bank
IWB	Marking multiple choice questions
MICR	Capturing bar code marks into a computer
OBR	Entering digital signatures into a computer
OMR	Allows computer images to be displayed onto a board using a digital projector. The instructor can then manipulate the elements on the board by using his finger as a mouse, directly on the screen.

15. Write the following acronyms in full; *[7 marks]*

a. ENIAC

………………………………………………………………………………………

b. PC

………………………………………………………………………………………..

c. EPROM

………………………………………………………………………………………

d. HDD

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e. EDIVAC

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………………………………………………………………………………………..

f. PSU

………………………………………………………………………………………

g. I/O

………………………………………………………………………………………..

16. State **four** characteristics that humans share with computers. *[4 marks]*

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17. State any **two** machines mentioned in the history of computers since 1936. *[2 marks]*

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18. Describe the following types of computers.   *[3 marks]*

   a.   Super computers

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

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

   b.   Palmtop computers

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

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

   c.   First Generation computers

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

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19. Convert the following units to hertz; *[3 marks]*

   a.   Kilohertz

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

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

   b.   Megahertz

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

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

c. Gigahertz

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20.

    a. What is a computer system? *[1 mark]*

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    b. State the three elements of a computer system. *[3 marks]*

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21.

    a. The SI unit for measuring the memory of a computer is called? *[1 mark]*

…………………………………………………………………………………………………

    b. Why is the main memory important to computers *[1 mark]*

…………………………………………………………………………………………………

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22. Your Kiswahili teacher who is not too conversant with computers wants to purchase a laptop computer and has resolved to seek your advice of the same. Describe **four** features that you would advise her to seriously consider while purchasing it. *[4 marks]*

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23. State any **two** functions of the CPU. *[2 marks]*

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24.

    a.   What are peripheral devices? *[1 mark]*

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    b.   State any **three** examples of peripheral devices *[3 marks]*

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25. Discuss [in **one** paragraph] about the future of computers; (featuring *'processing power & speed', 'memory & storage capacity', 'technology', 'size' and 'software'*) *[5 marks]*

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Marking Scheme

1. **State three Computer Laboratory precautions and measures necessary to protect computers from damage [3 marks]**

   a) *Avoid entering the computer laboratory with foods and beverages*
   b) *Avoid entering the computer lab with muddy shoes*
   c) *Do not stock inflammables in computer lab*
   d) *Put proper ventilation*
   e) *Control humidity at 50%*
   f) *Proper cabling*
   g) *Train learners on how to handle computers*
   h) *Shut down computers after use*
   i) *Shutdown computers using the right procedure*
   j) *Avoid smoke and dust in the computer lab*
   k) *Do not use foreign disks without the permission from a teacher/technician*
   l) *Do not download and install programs in the computer without permission*
   m) *Install gaseous fire extinguishers in the lab*

2. **Describe the following computer words:** *[3 marks]*

   a. **Artificial Intelligence;**

   This is a field of computer science that deals with designing machines that mimic human intelligence such as reasoning, self-correction and learning.

   b. **Liveware;**

   This is the computer user

   c. **Booting;**

   Booting is the process where a computer goes on self-test in readiness for use.

3. **State any five uses of computers in the following areas;**

   a. **Government Offices [1× 5 = 5 marks]**
      i. *Run security systems such as CCTV cameras and security alarms*
      ii. *Save records of workers and assets*
      iii. *Communication*
      iv. *Research*
      v. *Running air conditioning systems*
      vi. *Running of Management Information Systems*
      vii. *Manipulating numeric data*

b. **Military [1× 5 = 5 marks]**

       i.   *Typesetting*

     ii.   *Publishing of military instructions and policies*

   iii.   *Running management information systems*

   iv.   *Running of security systems such as CCTV, biometric entry/exit points and alarms*

    v.   *Research work such as gathering information*

   vi.   *Running of lifts and elevators in tall buildings*

  vii.   *Used in laboratories and workshops to run air conditioning systems and control machines*

 viii.   *Automating military hardware/equipment*

   ix.   *Producing reports*

    x.   *Budgeting*

   xi.   *Keeping records of solders and assets*

  xii.   *Communications such as use of e-mails and combat communication systems*

4.

a. **State two reasons why the keyboard is categorized as an input device. [2 marks]**

a) *Enters data into a computer*
b) *Converts data from human readable form into machine readable form for processing*

b. **Other than the keyboard, list any other three input devices. [3 marks]**

a) *Mouse, joy stick, track ball*
b) *Keypad*
c) *Scanners*
d) *Digitizers*
e) *Digital camera*
f) *Interactive white board*
g) *Light pen*
h) *Touch screen*
i) *Tablet*

5. State three differences between first generation and fifth generation computers. [3 marks]

	First Gen.		*Fifth Gen.*
1	*Big in size*	1	*Small in size*
2	*Consumed a lot of power*	2	*Consume less power*
3	*Generated a lot of heat*	3	*Generate less heat*
4	*Used vacuum tubes and thermionic valves to process*	4	*Use VLSI to process*
5	*Broke down more often*	5	*Are more stable*
6	*Low processing power/ slow in processing*	6	*More processing power/ fast in processing*
7	*Less storage capacity*	7	*More storage capacity*
8	*Less memory*	8	*More memory*
9	*Not portable*	9	*Portable*
10	*Used command line software*	10	*Use GUI software*

6. State input/output devices that can do the following tasks. *[6 marks]*

A. Enter voice data into a computer …………*microphone/all voice input devices*

B. Enter text data into a computer directly ……… *Scanner*

C. Display all happenings in the computer chassis ……… *monitor/VDU/Screen*

D. Control the cursor on the computer screen …………… *mouse/Joy Stick/Trackball*

E. Enter text data into a computer through typing ………… *keyboard/keypad*

F. Enter data into a computer in form of graphics ………… *Camera, Tablet*

7. State the three categories of microcomputers *[3 marks]*

    a. *Desktop*

    b. *Laptop*

    c. *Palmtop*

8. Give three reasons why computers should be shut down after use. *[3 marks]*

    a) *To avoid loss of information*
    b) *To avoid h/w or s/w damage in case of a blackout/ power fault*
    c) *The computer reminds the user to save his/her files*
    d) *For data security reasons*
    e) *To save electric power*

9. **State four reasons why a mobile phone is regarded as a computer.** *[1×4= 4 Marks]*

   a. *It is programmable.*

   b. *It is an electronic device.*

   c. *It can process data into information i.e. input, process and output.*

   d. *It can store information and transmit it.*

   e. *It has a CPU*

10. **Name the technology that was used to develop the following generations of computers**
    [1×4= 4 Marks]
    i. *Second generation ……………………………..transistors*

    ii. *Third generation ……………………………….Integrated circuits*

    iii. *Fifth generation ………………………………….very large scale integrated (VLSI)*

11. **State four reasons why smartphones and tablets are more popular than desktops and laptops in the current world** *[4 marks]*
    a. *They are portable and easy to carry*
    b. *They are relatively cheap*
    c. *They are easily available and their spare part too are easy to acquire.*
    d. *Do not require education to get skills on how to use them.*
    e. *They support advanced voice data communications which is more efficient as compared to desktops and laptops*
    f. *Can be used in areas without electricity*
    g. *They consume less power.*
    h. *They can be used to do a variety of tasks*
    i. *They are enhanced with exciting social software applications such as Whatsapp, Facebook, Twitter, Instagram etc.*
    j. *They have exciting features such as a camera, touch screen, multimedia capabilities and wireless communications capabilities.*

12. **List any four reasons why the study of *'The Computer Laboratory'* is essential in the study of computer studies as a subject.** *[4 marks]*
    a) *Reduces expenses on maintenance*
    b) *Ensure the safety of the learners*
    c) *Ensure the safety of computers*
    d) *Trains the learner on how to respond during emergence*
    e) *To create a conducive environment for the execution of computers and learning of computer studies as a subject.*
    f) *Avoid loss of data especially private and confidential.*
    g) *Trains the learner to be self-reliant.*
    h) *Creates awareness to the learner on usage of hardware and software resources and restrictions especially on the EULA – End User Licence Agreement with the manufacturer.*

13. State the use of the following keys of the keyboard; [5 marks]

    a. **Menu key**
       displays a dropdown list of commands for the user to choose from. Works like 'right clicking the mouse

    b. **Insert key**
       swaps change over modes from insert mode to type over mode and vice versa

    c. **Home key**
       takes the cursor to the beginning of the current line

    d. **Del key**
       gets rid of a character or a space right of the cursor position

    e. **Print Screen key**
       screen shots images on the screen of a computer

14. **Match the table below appropriately.** *[5 marks]*

	Device		*Uses*
i.	*Light pen [D]*	A	*Capturing cheque marks in a bank*
ii.	*IWB [E]*	B	*Marking multiple choice questions*
iii.	*MICR [A]*	C	*Capturing bar code marks into a computer*
iv.	*OBR [C]*	D	*Entering digital signatures into a computer*
v.	*OMR [B]*	E	*Allows computer images to be displayed onto a board using a digital projector. The instructor can then manipulate the elements on the board by using his finger as a mouse, directly on the screen.*

15. **Write the following acronyms in full; [7 marks]**

    a. **ENIAC** – *ELECTRONIC NUMERIC INTEGRATOR AND CALCULATOR*
    b. **PC** – *PERSONAL COMPUTER*
    c. **EPROM** – *ERASABLE PROGRAMMABLE READ ONLY MEMORY*
    d. **HDD** – *HARD DISK DRIVE*
    e. **EDIVAC** - *ELECTRONIC DESCRETE INTEGRATOR VARIABLE AUTOMATIC CALCULATOR*
    f. **PSU** – *POWER SUPPLY UNIT*
    g. **I/O** – *INPUT/OUPUT*

16. **State four characteristics that humans share with computers.** *[4 marks]*

    a. *Both can process data into information*

    b. *Both can store information/data*

    c. *Both can input data*

    d. *Both can output information*

    e. *Both can transmit information/data*

17. State any two machines mentioned in the history of computers since 1936. *[2 marks]*

    a. *Harvard mark 1 (1943)*

    b. *Z1 (1936)*

    c. *Atanasoff – Berry Computer (ABC) (1939)*

    d. *ENIAC (1946)*

    e. *UNIVAC (1946)*

    f. *Osborne 1 (1981)*

    g. *IBM Series (from 1981) i.e. IBM 5150*

    h. *TRS – 80 (1977)*

    i. *286-AT (1984)*

18. Describe the following types of computers. *[3 marks]*

    a. **Super computers**
        they are the largest computers of all. Have high memory and high processing power. Are expensive as compared to others.

    b. **Palmtop computers**
        these are computers used while held on the palm of a hand such as a mobile phone

    c. **First Generation computers**
        these computers were the first electronic computers, were large in size, used vacuum tubes and thermionic valves to process, generated a lot of heat and consumed a lot of power.

19. Convert the following units to hertz; [3 marks]

    a. Kilohertz
        1000 hertz
    b. Megahertz
        1000 000 hertz
    c. Gigahertz
        1000 000 000 hertz

20.

a. What is a computer system? [1 mark]
a computer system is a collection of computer entities that work together to input, process and output information.

b. State the three elements of a computer system. [3 marks]

    i.   *Hardware*
    ii.   *Software*
    iii. *Liveware*

21. .

    a. **The SI unit for measuring the memory of a computer is called? [1 mark]**

    byte

    b. **Why is the main memory important to computers [1 mark]**

    it holds data temporarily as it enters and gets out of the CPU to allow processes to smoothly and harmoniously run in the CPU.

22. **Your Kiswahili teacher who is not too conversant with computers wants to purchase a laptop computer and has resolved to seek your advice of the same. Describe four features that you would advise her to seriously consider while purchasing it. [4 marks]**

    a. *End user licence agreement [EULA]*

    b. *Warranty*

    c. *Processing speed*

    d. *GUI Software*

    e. *Memory*

    f. *Storage capacity*

    g. *Enhancements of ports and the number of peripheral devices it can support.*

23. **State any two functions of the CPU. [2 marks]**

    a. *Manipulate numeric and logic data*

    b. *Coordinate all the activities in the computer*

    c. *Provide temporary storage for processing tasks*

24.

    a. **What are peripheral devices? [1 mark]**

    these are input/output devices that can be connected to the computer chassis

    b. **State any three examples of peripheral devices [3 marks]**

    printer, modem, monitor, mouse, camera, scanner, keyboard, plotter

25. **Discuss [in one paragraph] about the future of computers; (featuring 'processing power & speed', 'memory & storage capacity', 'technology', 'size' and 'software') [5 marks]**

   a. **on 'processing power & speed',**

   *award a mark on either **high processing power** or **high processing speed** [1mk]*

   b. **on 'memory & storage capacity',**

   *award a mark on **large memory** or **large storage capacity** or **future RAM will not be volatile** [1mk]*

   c. **On 'technology',**

   award a mark on the mention of any of these words used correctly: Qubits, 64, 128, 256-bit processor, robotics, nanotechnology, fibre optic, [neural electronics]   et al. [1mk]

   d. **on 'size'**

   award a mark on small size, or customizable size, portability [1mk]

   e. **On 'software'**

   award a mark on existence of human language programmable codes, computers will have ability to learn, reason and adjust to circumstances. [artificial intelligence] [1mk]