

**MACHAKOS COUNTY KCSE TRIAL AND PRACTICE EXAM 2015***Kenya Certificate of Secondary Education (K.C.S.E.)*

451/1

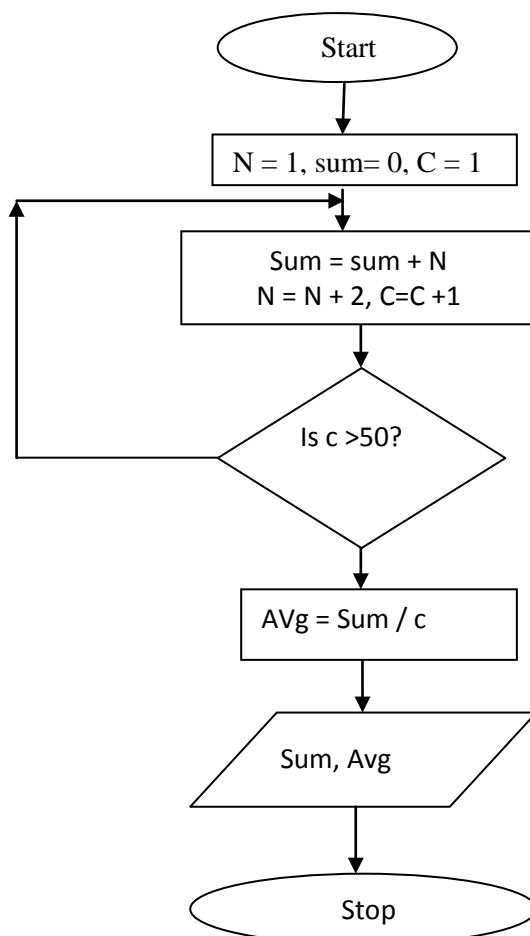
**COMPUTER STUDIES****PAPER 1****MARKING SCHEME**

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1. a. Text wrap is a feature that enables a text to surround a picture or diagram.  
b. Feature which is used to force the insertion pointer to move to a new column in a page automatically.
  2. a. It is an internet site where a person can regularly post personal information, music, movies and diaries and socially interact with people connected to the same.  
b. Private and confidential information is constantly at risk from hackers, crackers and fraudsters who carry out their trade on the internet.
  3. Installation is the process of copying program files into a computer so that they can be executed, while configuration refers to the process of fine tuning or defining options provided by the installed software.
  4. a.  
A Path  
B File name  
C File name extension / extension (3marks)  
(b)
    - Identify file type
    - Identify application software associated with the file
    - Enable OS determine how to handle the file
    - Enables antivirus determine how to handle the file
    - Enable easy categorization / indexing / fetching of files. (Any one at 1 mark)
  - (c) Hard disk / magnetic disk / drive C (anyone at 1 mark)
  5.
    - **Entertainment** where users participate in virtual reality games / 3D movies
    - **Training** of pilots how to fly planes.
    - **Marketing / sales** where sales people can take potential customers through a products without having the real product e.g. houses / cars / planes / schools (Any one at 1 mark each)
  6.
    - Monitor/ VDU
    - Speaker
    - Light emitting diodes (Each at 1 mark)
  7.
    - Eyes pattern
    - Finger prints
    - Voice
    - Lips
    - Face
  8. a) Contact with contaminated systems:  
b) Use of pirated software:  
c) Infected proprietary software:  
d) Fake games:  
e) Freeware and shareware:  
f) Updates of software distributed via networks:
  9. - Syntax errors – errors encountered as a result of breaking the syntax of a particular programming language  
- Logical errors – as a result of wrong logical flow of commands, they cannot be detected by the computer
  10. Transaction file – used for feeding entries into the master file i.e. updating the master file after a transaction.  
Master file – contains the primary entries which do not require frequent changes or updates. Provides the records required by other types of files.
  11. i) Connectivity devices and the media are expensive.  
ii) Installation is default because the cable must be carefully handled.  
iii) It is relatively complex to configure.
  12. a. -A **template** is a file that contain the structure & tools for shaping elements such as the style and page layout of finished files. It contains the standard text, graphics and formatting for use in all documents of this type.
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- A **Template** is a document that acts as a blue print or outline for other documents of the same type.
  - b. - Using templates helps to save time & makes creating of new documents easy.
  - It also ensures that there is consistency between the documents being created.
13. i) Human errors e.g. inaccurate data entry ,accidental deletion.  
 ii) Natural disasters such as fires, floods and earthquakes.  
 iii) Worms and viruses.  
 iv) Hardware malfunctions.  
 v) Fraud.  
 vi) Malicious deletion or changing of data.
14. Due to automatic data compression
15. Loss of signal strength  
 Deterioration of signal quality
16. - The CPU can easily understand low – level languages without or with little translation  
 - The program instructions can be executed by the processor much faster as complex instructing are already broken down into smaller simpler ones .  
 - They have a close control over the hardware, are highly efficient and allow direct control of each operation  
 - They require less memory space  
 - They are stable i.e. do not crash once written  
 - Not commonly used, hence can be used to code secret programs (Each 3 correct @ 1 mk x 3= 3 mks)

Interpreters	Compilers
Translates the source program one instruction at a time.	Translates the entire source code at once before execution
Translates the program each time it runs hence slower than the compiler	Executes faster than the interpreter since the object code can be stored and retrieved when required
Interpreted object code occupies less space than the compiled one	Since compiled object files are larger than the interpreted ones, they thus occupy large space

c.



PSEUDOCODE

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Begin
Set C= 1
Sum = 0
N= 1
Repeat
Sum = Sum+ N
N= N + 2
C= C + 1
Until c= 50
Avg= Sum/ C
Print Sum, Avg
End
    
```

17. a) i)  $15_{10}$   
 $= 1111_2$   
 $12_{10} = 1100_2$  } ✓ 1 mk  
 Ones complement of  $= 1100_2 = 0011_2$  ✓ (1mk)  
 $2^5$  of  $0011 = 0011 + 1 = 0100$  ✓mk  
 Therefore:

$$\begin{array}{r}
 1111_2 \\
 + 0100_2 \\
 \hline
 1011_2 \\
 0011 + \\
 = 0011_2 \quad \checkmark 1 \text{ mk}
 \end{array}$$

- ii)  $10111_2 - 1011_2$   
 Ones complement of  $01011_2 = 10100_2$  ✓ 1 mk  
 $2^5 = 10101$  ✓ 1  
 Therefore  $10111$   
 $\underline{10101}$  ✓ 1  
 $101100$

- b)  $1011 \rightarrow$  -ve number  
 $0100 \rightarrow$  +ve number ✓ 1

$$\begin{array}{r}
 = 1 \times 2^2 = 4 \\
 \checkmark 1 \quad \checkmark 1 \quad \checkmark 1
 \end{array}$$

- c) Whole numbers

$10/2 = 5$	R	0	↑ read upward. ✓ 1 mk
$5/2 = 2$	R	1	
$2/2 = 1$	R	0	
$1/2 = 0$	R	1	
$0.375 \times 2 = 0.75$			↓ read the whole number downwards ✓ 1 mk
$.75 \times 2 = 1.50$			
$.5 \times 2 = 1.00$			
$.5 \times 2 = 0.011$			

Combine the two

$$\begin{array}{r}
 = 1010_2 + 0.011_2 \quad \checkmark 1 \text{mk} \\
 = 1010.011_2 \quad \checkmark 1 \text{mk}
 \end{array}$$

- a) **Base five numbers**  
**0, 2, 3, 4** ✓ 1mk

18. a) State and explain two disadvantages that will come about if a network was to be installed in your school.

- i) High initial cost – The cost of buying network hardware and software is very high.  
 ii) Security issues – The data on the network is prone to illegal access threats.

- b) Disadvantages of wireless networks.

(4mks)

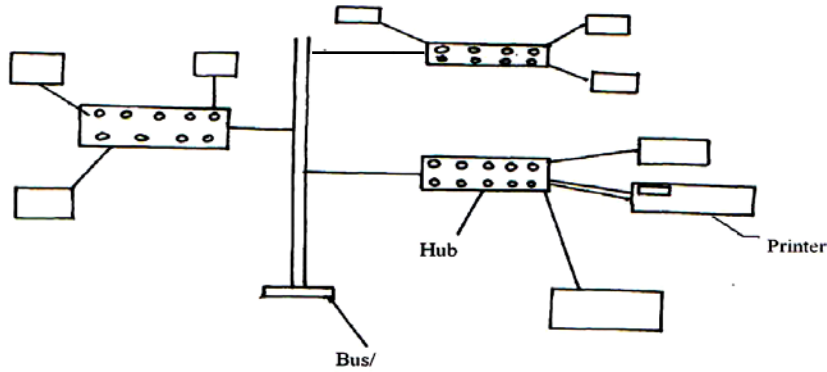
- i) Difficult to establish or configure  
 ii) Initial cost is very high

- c) Write the following abbreviations in full.

(4mks)

- i) F.T.P – File transfer protocol  
 ii) H.T.T.P - Hyper text transfer protocol

- d) With the aid of a diagram, discuss Hybrid topology.  
- This are groups of star – configured networks connected to a linear bus backbone.



- e) Discuss one advantage of client / Server network. (2 mks)  
- It is easier to access files and other resources easily because they are all available on the server computer.
19. a) Explain why a computer is able to display the correct time and date when it has just be switched on. (2mks)  
Because it is set and stored in a special memory known as the complementary metal – oxide semiconductor (cmos) chip which is powered by cmos battery
- b) Discuss two types of special memories found in computer system. (4 mks)
- Cache – Fast type of RAM found in the processor.
  - Buffers – Special memories found in the input / output devices.
  - Register - Hold one piece of date at a time and are found in the ALU
- c) i) Define a bus with reference to a computer system. (1 mk)  
- Bus – This are electronic pathways or links
- ii) List two examples of buses (2 mks)
- Address bus
  - Data bus
  - Control bus
- d) Distinguish between a power cable and interface cable. (2 mks)  
- A power cable is used to transmit data from the source (socket) to the computer while interface cables are special cables used to connect peripheral cables to the system unit.
- e) Differentiate between the different types of RAM. (4 mks)  
- Static RAM – is a fast type of RAM located inside the microprocessor  
- Dynamic RAM – is a relatively slow type of RAM. It has the tendency for the stored charge to leak a way even with constant power supply hence requires periodic recharging.
20. a) i) Define a system. (1mk)  
- Is a set of organized components which intersect in a given environment and within a specified boundary to achieve collective goals.
- ii) Explain system entropy (1mk)  
- It means decay where a system slowly becomes useless to the user due to improvement in user requirements
- b) State three circumstances that can lead to development of information systems. (3mks)
- New opportunity
  - Problems
  - Directives
- c) Distinguish parallel changes over from straight change over as used in system implementation. (2mks)  
- Parallel change over both old and new systems are run parallel to end other for some time until users have confidence in new system is stopped and discarded and the new system started immediately. While in straight change over the system is immediately implemented and the old one discarded
- d) Discuss two fact finding methods. (4mks)
- Interviews – it is carried out with relevant stakeholders in order to get views about the current system.
  - Questionnaires – Special purpose document that allows a person to collect information and opinions from people who receive and respond to it.
  - Observation – Require the observer to participate or watch closely as a person performs activities in order to learn about the system.
  - Automated method – Used when one wants to get actual data which may be difficult to get through interviews, observation or questionnaires.
- e) Differentiate an open system from a closed system. (2mks)  
An Open system is that which interacts and communicates with its environment constantly. It receives inputs from & gives output to the to the environment.  
A closed system is that which does not interact or communicate with its environment. It does not communicate to or receive communication from its environment.
- f) List two responsibilities of a system analyst. (2mks)
- Review an existing system and making recommendation on how to improve or implement an alternative system
  - Working hand in hand with programmers to construct a computerized system.
  - Coordinating training of new system users and owners.