

Name..... Adm. No.....

Date .....Student's Signature.....

451/1  
COMPUTER STUDIES  
PAPER 1  
(THEORY)  
FEB 2021  
TIME: 2 ½ HRS

**GIANCHERE FRIENDS SECONDARY SCHOOL**  
**Kenya Certificate of Secondary Education**  
**(K.C.S.E)**

**FORM 3**  
**TERM 2**

**Instructions to candidates**

1. This paper consists of TWO sections, A and B
2. Answer all questions in sections A.
3. Answer questions in English.
4. Answer question 16 and any other THREE questions from section B.

**FOR EXAMINERS USE ONLY**

SECTION	QUESTION	SCORE
A	1 – 15	
B	16	
	17	
	18	
	19	
	20	
TOTAL MARKS		

This paper consists of x printed pages.  
Candidates should check to ensure that all pages are printed as indicated and no question is missing.

## SECTION A (40 marks)

Answer *all* questions in this section in the spaces provided.

1.(a) Headache, back and neck pain may result from use of computers. Explain **two** ways in which back and neck pain can be minimized. (2mks)

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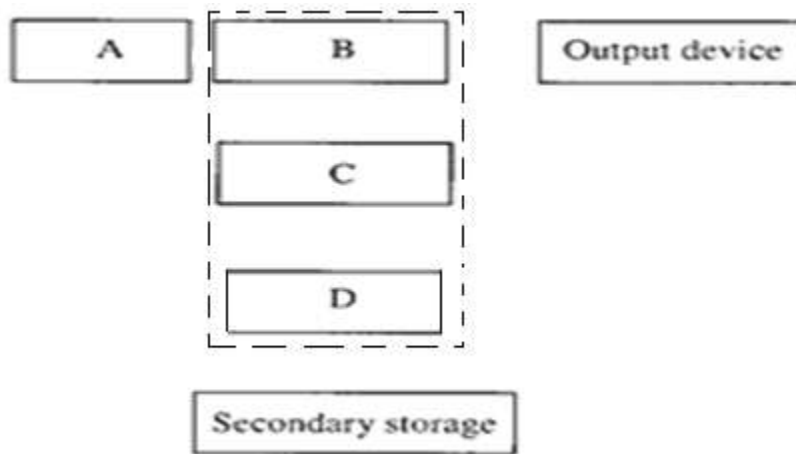
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(b) State how computer have been made more users friendly for persons that are:

- (i) Blind..... (1/2mk)
- (ii) Without hands..... (1/2mk)

2. The diagram below represents the essential features of a computer system. Study the diagram and answer the questions that follow:



(a) (i) Name and describe the following components (4mks)

A.....

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B.....

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C.....

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D.....

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(ii) On the diagram above, indicate the **direction** of data flow using arrows (1mks)

3. Gianchere High School intends to purchase new computer to be used by students in the e-learning room for accessing digital learning resources and personal research. Advise the school on **two** computer hardware system specification features to consider as a measure of enhancing performance of the computers. (2mk)

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4. State two items that an electronic mail should have for it to be sent (2mk)

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5. A worker is unable to travel to the office but may still be able to do the office work through telecommuting.

(a) Explain why the worker may use each of the following:

i. Email (1mks)

ii. Fax (1mks)

iii. Firewall (1mks)

iv. Digital camera (1mks)

6. Explain the term search engine as used in the Internet. (2 mks)

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7 (a) Explain **two** ways in which an operating system provides data security in a computer system  
(2mks)

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8. File conversion, in system development, refers to modifying or changing the format of files when a new system is introduced e.g. from manual to computerized. State any **THREE** factors considered before the file conversion process. (3mks)

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9. A student saved a document in a diskette. Later on, the student found that the diskette could not open and therefore the work got lost. Give **three** precautions the student should have taken to ensure the work was not lost. (3mks)

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10. A video rental shop uses a computerized system to record which videos have been loaned out. When a video is loaned out, the customers' data is recorded on computer file. Describe **TWO** computer processing files that will be needed to store permanent customer records and temporary records that keep on changing. (4mks)

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11. Define *overflow error* with respect to computation of data (1mk)

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12. What role is played by a reference file in data processing? (1mk)

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13. State **one** instance where batch processing could be applied (1mk)

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14. State **three** merits of distributed data processing modes. (3mks)

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15. State any **TWO** advantages of using computers in computer aided design (CAD) (2mks)

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**SECTION B (60 marks)**

Answer question 16 and any other THREE questions from *this section in the spaces provided.*

16. a) State two qualities of a good pseudocode. (2 marks)

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b) With the aid of flowchart diagrams, describe each of the following programme control structures:

(i) Sequence

(ii) Selection

c) Draw a programme flowchart that would accept three numbers and find their sum. If the sum is greater than 200, it adds 30 to the sum, otherwise subtracts 20 from the sum. The programme should then display the results. (5 marks)

17. A) (i) What is a **Blog** in relation to internet services

(2marks)

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(ii) Explain the impact of the internet in the *information security*

(2marks)

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(b) Kunta would like to send photos to Kinte via e-mail. Outline the steps Kunta would follow to send the photos as file attachments

(3marks)

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(c) Differentiate between the following in relation to data security and control

(4 marks)

(i) *Password* and *biometric* authentication.

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(ii) Privacy and Confidentiality.

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(d) Computer crimes include *Trespass*, *Hacking*, *Piracy* and *Sabotage*. Highlight each of them.

(4 marks)

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18. ( a) (i) State two reasons for data representation in a computer (2 Marks)

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(ii) Define the following words as used in data representation in a computer (4 Marks)

a) Nibble.....

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b) Word.....

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c) Byte.....

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d) Bit

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(iii) (a) Convert  $34_{10}$  to its binary equivalent. (2 Marks)

(b) Convert  $1001011_2$  into decimal number system equivalent (2 marks)

iv. (a) Briefly explain how data is represented in a computer (3 marks)

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(ii) With the aid of a well labelled diagram, distinguish between analogue and digital signals (2 marks)

19) (i) With the aid of a diagram, describe seven stages in system development life cycle (SDLC) in their logical sequence (7 marks)

(ii) (a) What is a closed system?(1mark)

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(b) Give **three** characteristics of a closed system

(3 marks)

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(iii) State **four** roles played by an information system.

(4 marks)

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20) (a) (i) State any **four** factors you would consider before installing an operating system. (4 marks)

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(ii) (1) State **two** reasons that causes computers to hang

(2 marks)

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(2) State solutions to the causes you listed 19. (ii) (1) above

(2 marks)

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(c) In relation to operating system, differentiate between Kernel and Shell. (2 marks)

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(d) State any **two** characteristics of a computer file.

(2 marks)

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(e) Mobile Operating System (OS) is software that allows Smart phones, Tablet PCs and other devices to run applications and programs. List any **THREE** examples of Mobile Operating Systems (3 marks)

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