

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

DateStudent's Signature.....

451/1
COMPUTER STUDIES
PAPER 1
(THEORY)
FEBRUARY 2017
TIME: 2 ½ HRS

ST CLARE GIRL'S HIGH SCHOOL - GATITU
Kenya Certificate of Secondary Education
(K.C.S.E)

451/1
COMPUTER STUDIES
PAPER 1
(THEORY)
JUNE 2017
TIME: 2 ½ HRS

Instructions to candidates

1. This paper consists of TWO sections, A and B
2. Answer all questions in sections A.
3. 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.

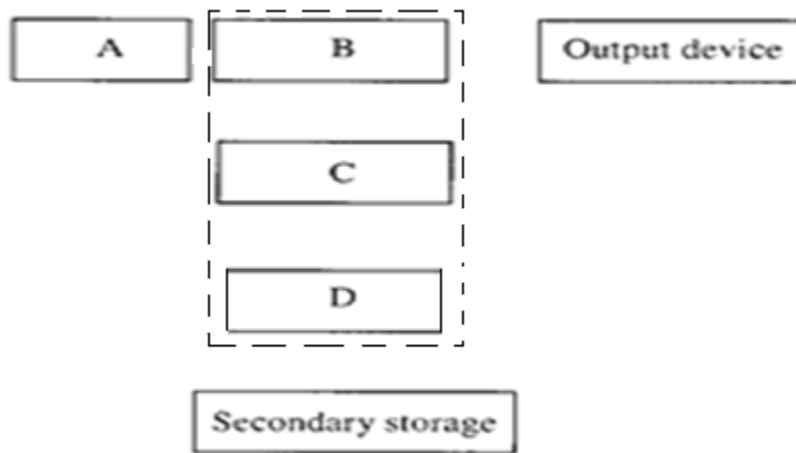
1.(a) Headache, back and neck pain may result from use of computers. Explain **two** ways in which back and neck pain can be minimized. (2mks)

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(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. ATIKA 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. Describe the following terms as used in Microsoft Word. (1mks)

(a) Text wrapping

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(b) Column breaks (1mks)

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5.(a) What are the following errors as displayed in a spreadsheet cell

(i) ##### (1mk)

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(ii) ##NUM! (1mk)

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(b) State the importance of the following terminologies as used in database.

(i) Enforcing Referential integrity (1 marks)

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(ii) Validation rule (1 marks)

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7. Differentiate between *Margins* and *column guides* as used in DTP (2 mks)

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8(a) A systems analyst is responsible for the introduction of a new computerized system after the software has been written and tested, and its hardware purchased. Describe any **ONE** method of introducing this new computerized system. (2mks)

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(b) 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. The cartoon below suggests that computers will replace people. Give any **THREE** reasons why this may happen. (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. Mention **one** ICT job that a college graduate can get in the video rental shop with regard to records management. (1mk)

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13.(a) Define an '**electronic office**' (1mk)

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14. Give any **THREE** common office tasks that ICT could help in doing them. (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 the **THREE** basic types of program control structures. (3 marks)

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b) Draw a flowchart which will simulate the processing of Student's report. The simulation should be such that the user repeatedly inputs marks per subject for eight subjects using a looping control structure. The computer processes the total marks and mean score of the student.

- Note.
1. It is assumed that the student does eight subjects.
 2. The outputs required are; Average score and Total marks. (7 marks)

c) Construct a pseudo code for the above flowchart.

(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) What is the hexadecimal equivalent of 676_8

(2 Marks)

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(ii) Use one's compliment to solve the following sum: $-12+25$

(2 Marks)

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(iii) Convert 34.175_{10} to its binary equivalent.

(2 Marks)

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(b) Using six bits find the two's complement representation of -27_{10}

(5 marks)

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(c) Find the difference in the following binary numbers;

(4 marks)

(i) $111011-10001$

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(ii) $100011.101-1001.10$

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19. (a) (i) Define Data Communication.

(2 marks)

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(ii) In relation to data communication, distinguish between DTE and DCE with an example of each
(3marks)

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(b) Communication media can be classified into **guided** media or **Unguided** media. List any TWO examples in each case
(2 marks)

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(c) Using an illustration, explain how *fibre optic* cable transmits data.
(4 marks)

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(d) (i) List any TWO hardware devices that make up a bus network. (2 marks)

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(ii) State TWO disadvantages of bus networks. (2 marks)

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20. (a) (i) State any THREE factors you would consider before installing an operating system.
apart from cost. (3 marks)

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(ii) Distinguish between *software installation* and *software configuration* in relation to
operating system (2 marks)

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(b) Abraham would like to distinguish between *System Tray* and *Task Manager*.

(i) Where are these TWO found? (1 mark)

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(ii) How are they different?

(2 marks)

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(c) In relation to operating system, differentiate between;

(i) Kernel and Shell.

(2 marks)

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(ii) Process and Page.

(2 marks)

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(d) 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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