COMPUTER STUDIES PAPER 1

KCSE 2011

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4.11   COMPUTER STUDIES (451)

4.11.1 Computer Studies Paper 1 (451/1)

SECTION A (40 marks)

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

1   The text in the box below was composed using a wordprocessor. The current cursor position is between the words "is" and "an".

> Computer security is an increasingly important consideration. From authentication....

Describe what happens to the text in the box above when each of the following keyboard keys are pressed.

(3 marks)

(a)   tab

(b)   enter

(c)   home

2   State **four** characteristics which make computers better than human beings.   (4 marks

3   Give **three** reasons why primary storage devices are not used for secondary storage.

(3 marks)

4   Asha has a hardware shop and lately, she is finding the task of managing daily sales in the shop overwhelming.

(a)   State a retail system that she should acquire.   (1 mark)

(b)   State **two** input devices that are used in retail systems.   (1 mark)

(c)   Apart from enhancing the speed of operation, state **two** other benefits that Asha will gain from using such a system.   (2 marks)

5   The accounts department of a secondary school is using a system that generates invoices that are printed in triplicate using carbon papers.

(a)   Name **one** type of printer suitable for this task.   (1 mark)

(b)   Give a reason for your answer in (a) above   (1 marks)

6   A secretary saved a document in a computer. After some time, she could not remember the name and the location of the file. State **four** file details that are assigned a file by the operating system which can assist in tracing the file.   (2 marks)

7   A student tried opening an application program on a computer that was functioning well. The program did not load and the operating system reported that the memory was insufficient. Give **two** causes of such response.   (2 marks)

8   State **two** measures that can be put in place to control piracy of software.   (2 marks)

9   Identify **three** hardware considerations to be made before installing an operating system.

(3 marks)

10 A water company sends out clerks to read water meters. The data collected by the clerks is then fed into the computer and then all the bills are printed at the same time.

    (a)   State **two** advantages of this approach.   (2 marks)

    (b)   Name this type of data processing.   (1 mark)

11 A school has acquired a system that imitates human teachers. Students can learn by getting answers from the system which they would normally get from the teacher. Give **three** advantages of this system.   (3 marks)

12 Pesa Mingi company has offices in Nairobi and Kampala connected in a network. The management is convinced that someone is illegally gaining access to the data in their computers. State **three** ways in which the company can overcome this problem.   (3 marks)

13 State the purpose of each of the following in database design.

    (a)   input mask   (1 mark)

    (b)   default value   (1 mark)

14 State the importance of considering the following factors when acquiring a software.

    (a)   warranty;   (1 mark)

    (b)   portability.   (1 mark)

15 State **two** application areas of real time systems.   (2 marks)

SECTION B (60 marks)

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

16   (a)   Give **two** characteristics of scripting languages.   (2 marks)

    (b)   Describe **two** types of errors that may be detected during program testing.   (4 marks)

    (c)   A company's workers travel to work either by public or by private means. All workers are paid a travel allowance of Ksh. 200, but those using private means are paid an additional Ksh. 100.

        (i)   Write a pseudocode to determine a worker's travel allowance.   (3 marks)

        (ii)   Draw a flowchart to determine a worker's travel allowance.   (4 marks)

        (iii)   Other than occupying large space, state **two** disadvantages of using a flowchart instead of a pseudocode.   (2 marks)

17   (a)   State **three** standard data coding schemes used in computing and electronic systems.   (3 marks)

    (b)   Convert each of the following numbers:

        (i) 110.101_2 to decimal;   (3 marks)

        (ii) 12.6875_{10} to binary;   (4 marks)

    (c)   Subtract 110.01_2 from 11001.0101_2.   (2 marks)

(d)   Using twos complement, perform the following binary arithmetic leaving the answer in binary notation.

$1101_2 - 100101_2$ (3 marks)

18   (a)   What is meant by each of the following terms as used in table creation?

      (i)   cell margin;   (1 mark)

      (ii)   nested table.   (1 mark)

  (b)   State **four** types of text wrap that can be applied to a graphic.   (2 marks)

  (c)   Distinguish between each of the following:

      (i)   axis labels and data labels;   (2 marks)

      (ii)   cropping and sizing.   (2 marks)

(d)   Figure 1 shows a section of a worksheet containing information on household items. Use it to answer the questions that follow.

	A	B	C	D	E
1	ITEM DESCRIPTION	NO OF UNITS	COST PER UNIT	TOTAL COST	
2	Wheat flour	12	110		
3	Rice	6	145		
4	Sugar	7	140		
5	Salt	2	20		

Figure 1

  (i)   Write a formula to calculate the total cost of rice.   (1 mark)

....

  (ii)   The prices of all items increased by 10% and the value 10% is placed in cell B8. Using cell addresses with absolute referencing only, write a formula to calculate the new unit price of salt.   (2 marks)

  (iii)   Write a function to display the number of cells in which the cost per unit is equal to 110.   (2 marks)

....

  (iv)   Write a function to display the least total cost for all items.   (2 marks)

19   (a)   What is meant by each of the following terms as used in the internet?

      (i)   surf;   (1 mark)

      (ii)   uploading;   (1 mark)

      (iii)   inbox.   (1 mark)

(b) A school has set up its network using wireless technology to link computers. State **three** problems that the school is likely to experience when using this technology.

(3 marks)

(c) List **three** ways by which parents can protect their children from accessing inappropriate content from the internet. (3 marks)

(d) Explain **three** problems associated with using e-mail technology for communication.

(6 marks)

20 (a) Explain **three** reasons why an organization may need to change to a new computerised system. (6 marks)

(b) State why each of the following is important in system documentation.

    (i)   sample data; (1 mark)

    (ii)   output reports. (1 mark)

(c) Name the tools used for data storage in each of the following methods of data processing.
    (i)   manual; (1 mark)

    (ii)   electronic. (1 mark)

(d) A teacher manages students' records by storing daily attendance information in a file called *register* and students' personal records such as year of birth and home address in a file called *students*.

    (i)   Identify the types of computer files named above. (2 marks)

    (ii)   Give a characteristic of data held in each file. (2 marks)

    (iii)   Name the field that should be used to link the two files. (1 mark)