451/1 – **COMPUTER STUDIES** **– Paper 1**
(THEORY)
Nov. 2018 – 2½ hours

Name .... Index Number ....

Candidate's Signature .... Date ....

Instructions to candidates

(a) Write your name and index number in the spaces provided above.
(b) Sign and write the date of examination in the spaces provided above.
(c) This paper consists of **two** sections; **A** and **B**.
(d) Answer **all** the questions in **Section A**.
(e) Answer question **16** and any other **three** questions from section **B**.
(f) **All** answers should be written in the spaces provided on the question paper.
(g) **This paper consists of 16 printed pages.**
(h) Do **not** remove any pages from this booklet.
(i) **Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.**
(j) **Candidates should answer the questions in English.**

For Examiner's Use Only

Section	Question	Maximum Score	Candidate's Score
A	1–15	40	
B	16	15	
		15	
		15	
		15	
	Total Score		

SECTION A (40 marks)

*Answer **all** questions in this section.*

1. State **two** reasons for the increased use of laptop computers in government offices. (2 marks)

    ....

    ....

    ....

    ....

    ....

2. Computer network technicians prefer to use command-line based operating system when configuring networks. State **three** reasons for the preference. (3 marks)

    ....

    ....

    ....

    ....

    ....

3. State **three** measures that should be put in place in a computer laboratory to safeguard users' health. (3 marks)

    ....

    ....

    ....

    ....

    ....

4. State **three** ways in which barcode readers may be used in schools. (3 marks)

....

....

....

....

....

....

5. State **three** advantage of flat panel monitors over cathode ray tube monitors as used in computers.
(3 marks)

....

....

....

....

....

....

6. State **three** possible reasons for the extinction of daisy wheel printers in the market. (3 marks)

....

....

....

....

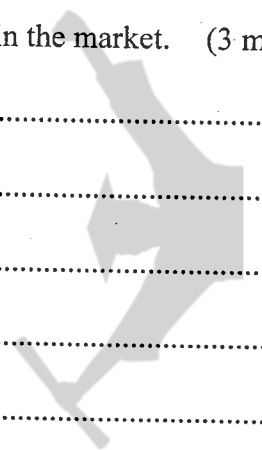..

7. State **three** ways in which an operating system secures a computer system.

....

....

....

....

....

8. A law firm prefers to use hard copy output over soft copy output when handling documents for legal matters. State **two** reasons for this preference. (2 marks)

....

....

....

9. State the function of each of the following features in a word processor application:

(a) Thesaurus; (1 mark)

....

....

(b) Comments. (1 mark)

....

....

....

10. With the aid of an example, explain the term *multi-level list* as used in word processing.

(3 marks)

....

....

....

....

....

....

....

11. Distinguish between real-time operating system and distributed operating system. (3 marks)

....

....

....

....

....

....

12. Explain the function of *protect sheet* feature in a spreadsheet program.

(2 marks)

....

....

....

....

6

13. State **four** computer-based careers introduced as a result of computerised data process method at the airport.

(2

....

....

....

....

14. In a spreadsheet, the formula =**If(A1>10, A1*77, A1*50)** is entered in a cell. Interpret the results.

(3 mar

....

....

....

....

....

15. State a stage in systems development life cycle where each of the following activities are carried out:

(a) identifying the technologies that may be used in a proposed system;

.... (1 mark)

(b) identifying shortcomings of a system;

.... (1 mark)

(c) preparing the system migration plan.

.... (1 mark)

918282   *Kenya Certificate of Secondary Education, 2018*
451/1

SECTION B (60 marks)

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

16. (a) With the aid of a flow chart, describe *a loop control structure* as used in programming.
(4 marks)

....

....

....

....

....

....

(b) Study the following pseudocode and answer the questions that follow.

1.   Start
2.   Get value1 and value2
3.   If value1 > value2 Then
4.   Maximum = value1
5.   Else If value1 < value2 Then
6.   Maximum = value2
8.   Else Go to 9
9.   Display Maximum
10.   Stop

(i) State the purpose of the pseudocode. (1 mark)

....

....

....

....

Kenya Certificate of Secondary Education, 2018
Turn over

(ii)   Draw a flowchart equivalent to the pseudocode.   (6 marks)

(c) Distinguish between a *source program* and a *compiler* as used in computer programming. (4 marks)

....

....

....

....

....

....

....

17. (a) (i) Explain the term *search engine* as used in the Internet. (2 marks)

....

....

....

....

(ii) Peter intends to download a movie from the Internet. State the **three** factors that may determine the total time taken to complete the download. (3 marks)

....

....

....

....

....

....

(b)   Wakulima online is an organisation that runs a web based system for assisting ... obtain market for their farm produce. State **four** technological reasons that may c farmer not to access the organisation's system.

(4 n.

....

....

....

....

....

....

(c)   Explain a situation when each of the following Desktop Publishing program features may be used when creating a publication:

(i)   cropping;

(2 marks)

....

....

....

(ii)   transparency.

(2 marks)

....

....

....

(d)   List **two** areas where infrared waves are used in data communication.

(2 marks)

....

....

18. (a) State **four** activities of the planning stage of systems development. (4 marks)

....

....

....

....

....

....

....

(b) Explain a circumstance when each of the following feasibility studies are carried out during systems development:

(i) Technical; (2 marks)

....

....

(ii) Economic; (2 marks)

....

....

....

(iii) Schedule. (2 marks)

....

....

....

827

A015

918282

(c)   **Table 1** and **Table 2** are related tables in a database. Use them to answer the questions that follow.

Table 1

Dept Code	Dept Name
001	Computer
002	Aviation
003	Engineering

Table 2

DeptID	Student Registration No.	Student's Name
002	St01	Alex Toro
003	St02	Naomi Komi
002	St03	Peter Kengo

(i)   Identify the appropriate primary key for each table.   (1 mark)

....

....

(iii)   Explain **two** benefits of enforcing referential integrity in the database.   (4 marks)

....

....

....

....

....

19.   (a)   Describe each of the following validation checks as used in data processing:

(i)   Preserve check;

                                                                              (2 marks)

....

....

....

(c) Using 10 – bits binary number system, perform the following decimal operation two's complement

(6

$$129_{10} - 128_{10}$$

827

A015

Kenya Certificate of Secondary Education, 2018
451/1

20. (a) The figure shows a network design. Use it to answer the questions that follow.

(i) Explain the function of each of the following in the network.

I Router; (2 marks)

....

....

....

II Firewall; (2 marks)

....

....

....

III File server. (2 marks)

....

....

....

....

(ii) State **two** categories of software that must be installed in a computer so that users can use it to access the internet. (2 marks)

....

....

(b) State **four** ways in which computers may be used to manage data in a research
environment.   (4 marks)

....

....

....

....

....

....

....

....

....

....

....

....

....

....

(c) Some computer companies have opted to use the Internet to provide shared processing
resources and online application services to users. State **three** advantages that this
approach will have on their customers.   (3 marks)

....

....

....

....

....

....

....

....

THIS IS THE LAST PRINTED PAGE.