

Name ..... Index Number .....

451/1  
COMPUTER STUDIES  
Paper 1  
(THEORY)  
Oct./ Nov. 2012  
2½ hours

Candidate's signature .....

Date .....



THE KENYA NATIONAL EXAMINATIONS COUNCIL  
Kenya Certificate of Secondary Education  
COMPUTER STUDIES

Paper 1  
(THEORY)  
2½ hours

<b>451/1 - Computer Studies - P1</b>	
Tuesday	11.00 am - 1.30 pm
30/10/2012	(2nd Session)

**Instructions to candidates**

- (a) Write your name and index number in the spaces provided at the top of this page.
- (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 18 printed pages.**
- (h) **Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.**

**For Examiner's Use Only**

Section	Question	Score
A	1 - 15	
B	16	
	17	
	18	
	19	
	20	
Total		

© 2012 THE KENYA NATIONAL EXAMINATIONS COUNCIL  
Kenya Certificate of Secondary Education, 2012  
COMPUTER STUDIES  
Paper 1

912113



Turn over

**SECTION A (40 marks)**

*Answer ALL the questions in the spaces provided.*

- 1** State **two** functions of the Control unit of a computer. (2 marks)

.....

.....

.....

.....

- 2** (a) Differentiate between hardware and software portability. (2 marks)

.....

.....

.....

.....

.....

.....

- (b) State **two** disadvantages of CD-ROM over magnetic disks. (2 marks)

.....

.....

.....

.....

- 3 One way in which an organisation enforces security of its computer systems is by restricting the use of removable media such as floppy disks and flash memories. Give **two** reasons for this. (2 marks)

.....  
.....  
.....  
.....

- 4 (a) What is meant by Data Communication Equipment? (1 mark)

.....  
.....

- (b) List **six** examples of Data Communication Equipment. (3 marks)

.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....

5 When purchasing a computer, the clock speed, RAM size, Hard disk size and monitor size are often quoted. State the unit for measuring: (2 marks)

(a) Clock speed; .....

(b) RAM size;.....

(c) Hard disk size;.....

(d) Monitor size.....

6 Name **three** types of graphics used in a word processor. (3 marks)

.....  
.....  
.....  
.....

7 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. (3 marks)

.....  
.....  
.....  
.....  
.....

8 Differentiate between relative cell referencing and absolute cell referencing. (2 marks)

.....

.....

.....

.....

.....

.....

9 State two:

(a) functions of an email software; (1 mark)

.....

.....

(b) protocols used in sending and receiving of emails. (1 mark)

.....

.....

10 With reference to word processing, describe the term:

(a) superscript; (1 mark)

.....

.....

.....

(b) section breaks. (1 mark)

.....

.....

**11** Describe the following types of relationships as used in Database design: (4 marks)

- (a) One-to-one;
- (b) One-to-many.

.....

.....

.....

.....

**12** State the stage of system development life cycle in which each of the following activities take place:

(a) determination of the cost-effectiveness of a system; (1 mark)

.....

.....

(b) interviews; (1 mark)

.....

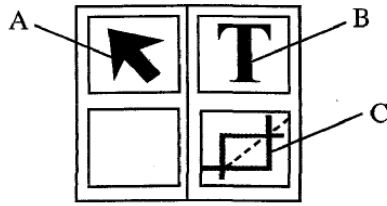
.....

(c) replacement of an old system with a new one. (1 mark)

.....

.....

13 The figure below is a toolbar for a DTP package.



State the functions of the tools labelled A, B and C. (3 marks)

A: .....

.....

B: .....

.....

C: .....

.....

14 State **two** roles of a programmer in system development life cycle. (2 marks)

.....

.....

.....

15 (a) What is meant by disk defragmentation? (1 mark)

.....  
.....  
.....

(b) State the purpose of disk defragmentation. (1 mark)

.....  
.....  
.....



**SECTION B (60 marks)**

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

**16 (a)** State the use of each of the following flowchart symbols. (3 marks)

(i)



.....

.....

.....

(ii)

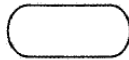


.....

.....

.....

(iii)



.....

.....

.....

(b) Below is an algorithm that is used to compute the values of R, S and T.

```
P = 5
Q = 6
INPUT N

If N is GREATER OR EQUAL TO 10
R = P * Q
S = Q - P
T = P + Q + R + S
ELSE
R = P + Q
S = Q
T = R + S
END IF
PRINT R, S and T
```

From the algorithm, determine the output if the input value of N is:

(i) 7; (3 marks)

.....

.....

.....

(ii) 10. (3 marks)

.....

.....

.....

- (c) Draw a flowchart for the algorithm in Question 16 (b). (6 marks)

- 17 (a) Convert each of the following binary numbers to decimal equivalent given that the left most digit is a sign bit.

(i) 0 0 1 0 1 1 0 1 (2 marks)

.....  
.....  
.....

(ii) 1 1 0 0 1 0 0 1 (2 marks)

.....  
.....  
.....

- (b) Convert the decimal number 0.42 to 6 bit binary notation. (4 marks)

.....

.....

.....

.....

.....

.....

- (c) Using two's complement, subtract  $11_{10}$  from  $8_{10}$ , leaving your answer in binary notation. (5 marks)

.....

.....

.....

.....

.....

.....

- (d) Perform the following binary operation. (2 marks)

$$11001 + 1101 - 101$$

.....

.....

.....

.....

.....

- 18 (a) State **three** techniques used by a network administrator to detect and prevent computer crimes. (3 marks)

.....

.....

.....

- (b) A company in town wishes to link its offices together. The linking may be through wireless or fibre optic network media.

- (i) State **two** benefits that the company would gain from the use of metropolitan area network (MAN). (2 marks)

.....

.....

.....

- (ii) State **three** advantages of using wireless over fibre optic network media. (3 marks)

.....

.....

.....

- (iii) State **two** limitations of wireless communication. (2 marks)

.....

.....

.....

- (iv) State **two** transmission media used in wireless transmission. (2 marks)

.....

.....

.....

- (c) State **three** ways in which computer virus infection can be prevented other than through restricting the usage of removable storage media. (3 marks)

.....

.....

.....

- 19** (a) (i) What is an information system? (1 mark)

.....

.....

.....

- (ii) State **two** roles of an information system. (2 marks)

.....

.....

.....

- (b) Describe the following file organisation methods:

- (i) random file organisation; (2 marks)

.....

.....

.....

- (ii) sequential file organisation. (2 marks)

.....

.....

.....

- (c) The following records were extracted from two files that contained student data.

**File A:**

<u>Reg. No.</u>	<u>Student Name</u>	<u>Sex</u>	<u>Address</u>
3002	Christine Onyancha	F	Box 8932 Kisii
3008	John Otieno	M	Box 7222 Nairobi
3001	Amina Muthee	F	Box 1243 Butere
3015	Peter Musyoki	M	Box 6621 Nyeri

**File B:**

<u>Reg. No.</u>	<u>Fees Payments</u>	<u>Date of Payment</u>
3002	1000	04/05/2011
3008	1500	03/09/2011
3001	900	02/09/2011
3015	400	21/09/2011

- (i) Which of the two files above represents a Transaction file? (1 mark)

.....

.....

- (ii) Give a reason for your answer in c(i) above. (1 mark)

.....

.....

- (iii) Name the other type of file represented above. (1 mark)

.....

.....

(d) An airline uses an information system whereby if a passenger at station A books a plane seat, this transaction is immediately shown at stations A and B such that no other passenger can book the same seat.

(i) Identify this data processing mode. (1 mark)

.....  
.....

(ii) State **two** advantages and **two** disadvantages of this data processing mode. (4 marks)

.....  
.....  
.....  
.....  
.....  
.....  
.....



20 (a) With the aid of a diagram, describe the Hierarchical Database Model. (4 marks)

.....

.....

.....

.....

.....

(b) List **three** factors that should be considered when developing a database application and give reasons why each should be considered. (6 marks)

.....

.....

.....

.....

.....

.....

- (c) (i) Name **three** types of validation checks during data entry. (3 marks)

.....

.....

.....

- (ii) Differentiate between primary key and index key. (2 marks)

.....

.....

.....

.....

**THIS IS THE LAST PRINTED PAGE.**