

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

451/1
COMPUTER STUDIES
Paper 1
(THEORY)
Oct./Nov. 2012
2 ½ hours

Candidate's Signature.....

Date.....

THE KENYA NATIONAL EXAMINATIONS COUNCIL
Kenya Certificate of Secondary Education
COMPUTER STUDIES
Paper 1
(THEORY)
2 ½ hours

451/1 – Computer Studies – P1 Tuesday 11.00 am – 1.30 pm 30/10/2012 (2 nd 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 question 16 and any other THREE questions from section B
- (e) All answers should be written in the spaces provided on the question paper
- (f) This paper consists of 18 printed pages
- (g) 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		



SECTION A (40 marks)

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

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

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

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3. One way in which an organization 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)

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

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

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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 graphic used in a word processor. (3 marks)

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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)

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

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9. State two:
(a) functions of an email software; (1 mark)

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

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10. With reference to word processing, describe the term:

(a) superscript; (1 mark)

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(b) section breaks (1 mark)

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

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

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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)

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(b) interviews; (1 mark)

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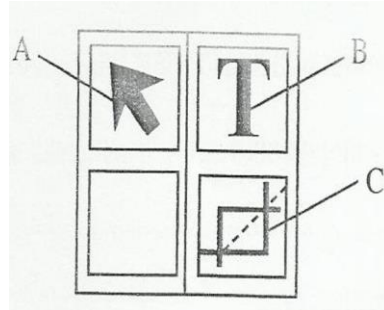
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(c) replacement of an old system with a new one (1 mark)

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



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

A:

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B:

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C:

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

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

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

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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 use of each of the following flowchart (3 marks)

(i) 

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(ii) 

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(iii) 

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

P = 5
Q = 6

INPUT

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)

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(ii) 10 (3 marks)

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(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) 00101101 (2 marks)

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(ii) 11001001 (2 marks)

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

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

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

$$11001 + 1101 - 101$$

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

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(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)

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

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(iii) State two limitations of wireless communication (2 marks)

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

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

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

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

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(b) Describe the following file organization methods:

(i) random file organization; (2 marks)

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(ii) sequential file organization (2 marks)

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

File A:

Reg. No.	Student Name	Sex	Address
3002	Christine Onyando	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:

Reg. No.	Fees payment	Date of Payment
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)

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

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

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(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)

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

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

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

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

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

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