

Name ..... Index No. .... / .....

451/1  
COMPUTER STUDIES  
Paper 1  
(THEORY)  
Oct./Nov. 2009  
2½ hours

Candidate's signature.....

Date.....

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

**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 **16** 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 Official Use Only**

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

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Turn over

**SECTION A (40 marks)**

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

**1** Give a reason for each of the following:

(a) changing a password regularly; (1 mark)

.....

.....

(b) typing and re-typing a new password when changing it. (1 mark)

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**2** With reference to quality of print, noise level and cost, compare a dot matrix with a Laser printer. (3 marks)

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**3** A computer accessories vendor needs to order supplies. A spreadsheet is used to calculate the order part of which is shown below.

	A	B	C	D
1.	Item	Price per unit	Number ordered	Cost (Kshs)
2.	56K modem	8,565.00	60	
3.	128 MB Ram	4,950.00	40	
4.	Pentium IV Processor	13,525.00	55	
5.			Total	

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(a) Write the formula that can be used in:

(i) D2 (1 mark)

.....

(ii) D5 (1 mark)

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(b) If a value added tax (VAT) of 16% was charged on each item and the number ordered was decreased by 10%, write a new formula that can be used in D2. (2 marks)

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4 List **two** uses of computers in meteorology. (2 marks)

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5 Explain the following terms as used in desktop publishing: (2 marks)

(a) embedded object

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(b) autoflow.

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6 (a) Name **four** approaches that may be used to replace a Computerised Information system. (2 marks)

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(b) Which of the approaches named in (a) above is appropriate for critical systems? Explain. (2 marks)

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7 Explain the following operating system functions:

(a) job scheduling; (1 mark)

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(b) interrupt handling. (1 mark)

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8 Name **four** toggle keys on a standard computer keyboard. (2 marks)

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9 A computer user typed the name Kajiado as Kajaido and 8726 as 8126.

(a) State the type of each error. (1 mark)

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(b) Explain how such errors can be controlled. (2 marks)

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10 Describe Third Generation Languages and name **two** examples. (2 marks)

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11 (a) (i) What is an internet protocol (IP) address? (1 mark)

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(ii) Why is an IP address necessary? (1 mark)

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(b) What is the purpose of the following internet domains? (1 mark)

(i) .org

.....

(ii) .gov

.....

12 (a) Name **two** types of buses found on the computer motherboard. (2 marks)

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.....  
.....

(b) State the purpose of each of the types of buses named in (a) above. (2 marks)

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13 (a) Name the **two** files commonly used in mail merge. (1 mark)

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(b) Name and explain the **two** types of dropcaps. (2 marks)

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**14** Give **three** ways in which horticultural farmers can benefit from the use of Information and Communication Technology (ICT). (3 marks)

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**15** Arrange the following job titles in the order of their seniority.

Database administrator, ICT manager, Systems analyst. (1 mark)

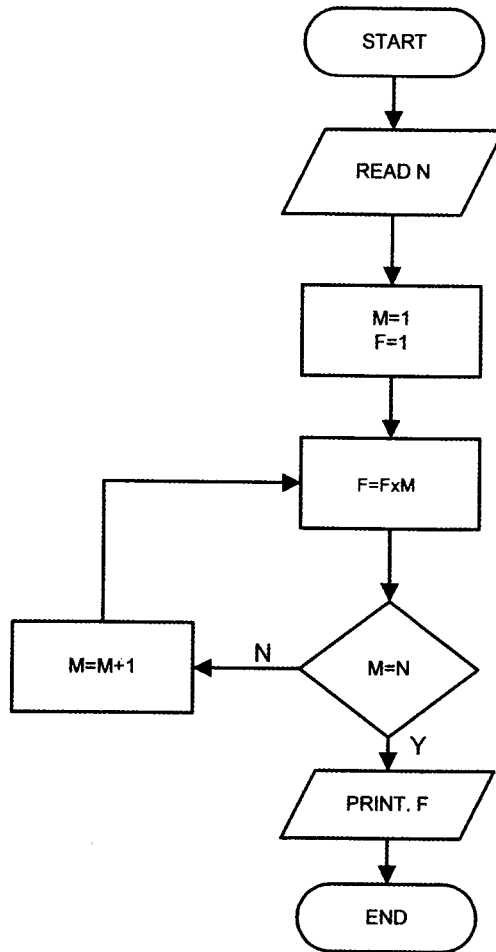
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**SECTION B** (60 marks)

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

**16** Study the flowchart below and answer the questions that follow.



(a) What would the flowchart generate as output if the value of N at input was:

(i) 6? (2 marks)

.....

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.....



(ii) 1?

(2 marks)

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(b) Write a pseudocode that does the same thing as the flowchart above.

(7 marks)

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- (c) Modify the flowchart so as to reject an input below 0 and to avoid the looping when the input is 0.

(4 marks)

17 A lecturer keeps the following student details in a database: name, age, course.

- (a) Write an expression you would use to compute the year of birth of a student using this year as the current year.

(2 marks)

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(b) What query expressions would the lecturer use to list the students whose age is above 15 years and below 25 years? (3 marks)

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(c) Which expression would the lecturer use to generate:

(i) the number of students in the database? (2 marks)

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(ii) the mean age of the students in the database? (2 marks)

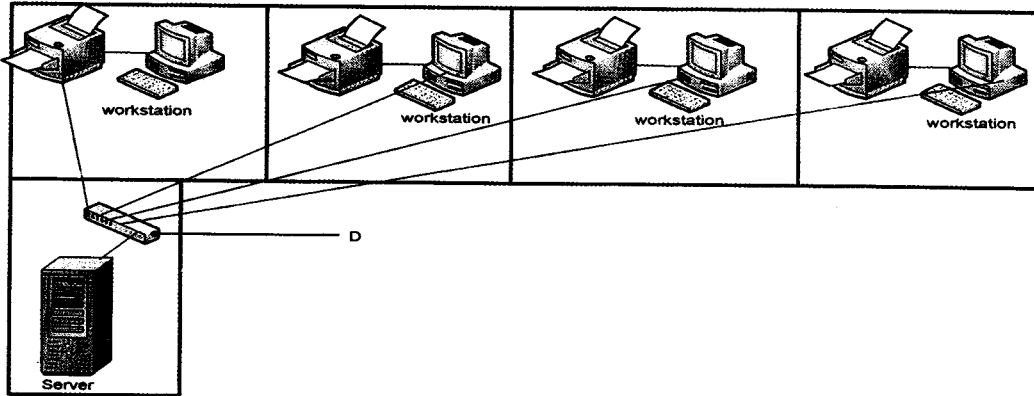
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(d) Name and describe any **two** types of database models. (6 marks)

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- 18 (a) The diagram below shows a layout of a computer network used by a law firm. A workstation and a printer are located in every consulting room.



- (i) Name the network topology depicted in the diagram. (1 mark)
- .....
- (ii) Name the device labelled D. (1 mark)
- .....
- (iii) State **four** functions of the device labelled 'server'. (4 marks)

(iv) Give **two** advantages and **one** disadvantage of the above network design. (3 marks)

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(v) If the firm intends to open extra offices in two different towns, name any **three** hardware devices that would be required. (3 marks)

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(vi) State any **two** security problems that might arise by linking the offices in different towns. (2 marks)

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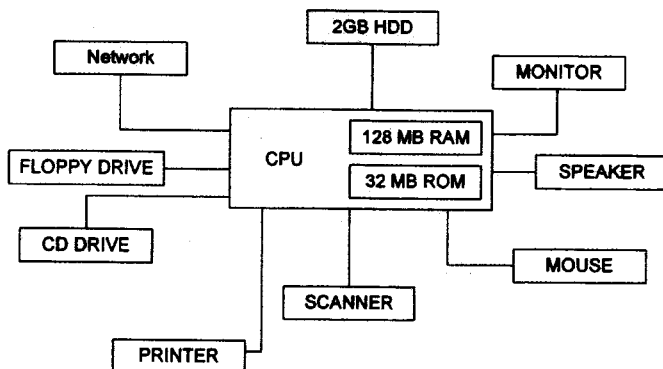
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(b) What is spyware? (1 mark)

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.....

19 (a) Study the following diagram and answer the questions that follow.



From the diagram:

(i) Name **two** devices that are used for long term storage. (2 marks)

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.....

(ii) Name **three** peripherals shown on the diagram that are used for input. (3 marks)

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(iii) Name **two** other devices that a Computer Aided Design (CAD) user might wish to add to the set-up above. (2 marks)

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- (b) A customer wishes to purchase a computer system. The customer can buy word processor, spreadsheet, database and a drawing package separately or as an integrated package. State **three** advantages why many computer users prefer integrated packages to separate packages. (3 marks)

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- (c) (i) An anti-virus software installed in a computer is loaded into the main memory each time the computer is switched on. Explain **three** ways in which computer viruses are spread from one computer to another. (3 marks)

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- (ii) Give **two** reasons why an anti-virus package should be updated regularly. (2 marks)

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- 20 (a) Perform the following binary arithmetic and give your answers in decimal notation:

- (i)  $1010.101 + 11.011$  (3 marks)

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(ii)  $1010.011 - 11.011$  (3 marks)

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(b) Convert the following numbers into their binary equivalents:

(i)  $0.5625_{10}$  (3 marks)

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.....  
.....

(ii)  $0.3125_{10}$  (3 marks)

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(c) Using four-bit twos compliment, perform the following arithmetic (3 marks)

$101_2 - 111_2$

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**THIS IS THE LAST PRINTED PAGE**

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