

NAME:..... ADM NO:.....CLASS.....

INDEX NO.....

451/1

COMPUTER STUDIES (THEORY)

PAPER 1

March 2017

TIME: 2 HOURS

SUNSHINE SECONDARY SCHOOL PRE MOCK 1

Kenya Certificate of Secondary Education (K.C.S.E)

COMPUTER STUDIES PAPER 1

(Theory)

2 HRS

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 questions 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.
- (i) Candidates should answer the questions in English.

For Examiner's Use Only

Section	Question Number	Candidate's Score
A	1-15	
B	16	
	17	
	18	
	19	
	20	
Total Score		

SECTION A (40 marks)

Answer all questions in this section in the spaces provided.

1. (a) State the meaning of the term *disk defragmentation* as used in computers. (1 mark)

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

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2. Identify the appropriate computer output device suitable for each of the following tasks:

- (a) generating receipts where carbon copies are required; (1 mark)

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- (b) an architectural drawing where precision is required; (1 mark)

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- (c) producing document output for a visually impaired person. (1 mark)

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3. Pesa Tele 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)

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4. Explain two ways in which the use of Internet could make reporting of corruption easier. (4 marks)

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5. State two ways in which software errors can be prevented in program development. (2 marks)

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6. Convert each of the following binary numbers to decimal equivalent given that the left most digit is a sign bit:

(a) 00101101 (2 marks)

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(b) 11001001

(2 marks)

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7. State the functions of each of the following keys on the computer keyboard:

(2 marks)

(a) backspace;

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(b) insert (ins).

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8. An organisation intends to replace an existing system by carrying out the process in stages.

(a) Name this implementation strategy;

(1 mark)

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(b) Give two reasons why the organisation is opting to use the implementation strategy in (a) above.

(2 marks)

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9. Headache, back and neck pain may result from the use of computers. State how each of them can be minimised. (2 marks)

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10. Students of a school intend to elect their school captain by secret ballot. State three ways in which computers can be used to improve the election process. (3 marks)

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11. Explain why an intranet is a more secure way to share files within an organisation compared to the Internet. (2 marks)

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12. List two career opportunities directly associated with computer networking. (2 marks)

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13. Distinguish between a formula and a function as used in spreadsheets. (2 marks)

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14. The C directory of a computer has folders named Form 1, Form 2, Form 3 and Form 4. Each class has students' folders named according to their admission number. The students created their own folder for subjects they are studying based on the table shown below:

Form 1	Form 2	Form 3	Form 4
OS	SP	Prog.	ADB
WP	DTP DB	Internet	

(a) A form four student intends to create a folder named *proj* to store project documents. State the path for the project folder. (1 mark)

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(b) Suggest how the student can ensure that:

(i) work is **not** lost in case the hard disk fails; (1 mark)

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(ii) the project is **not** copied by other students. (1 mark)

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

(a) State two advantages of this approach; (2 marks)

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(b) Name this type of data processing. (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. Figure 1 shows a flowchart. Use it to answer the questions that follow.

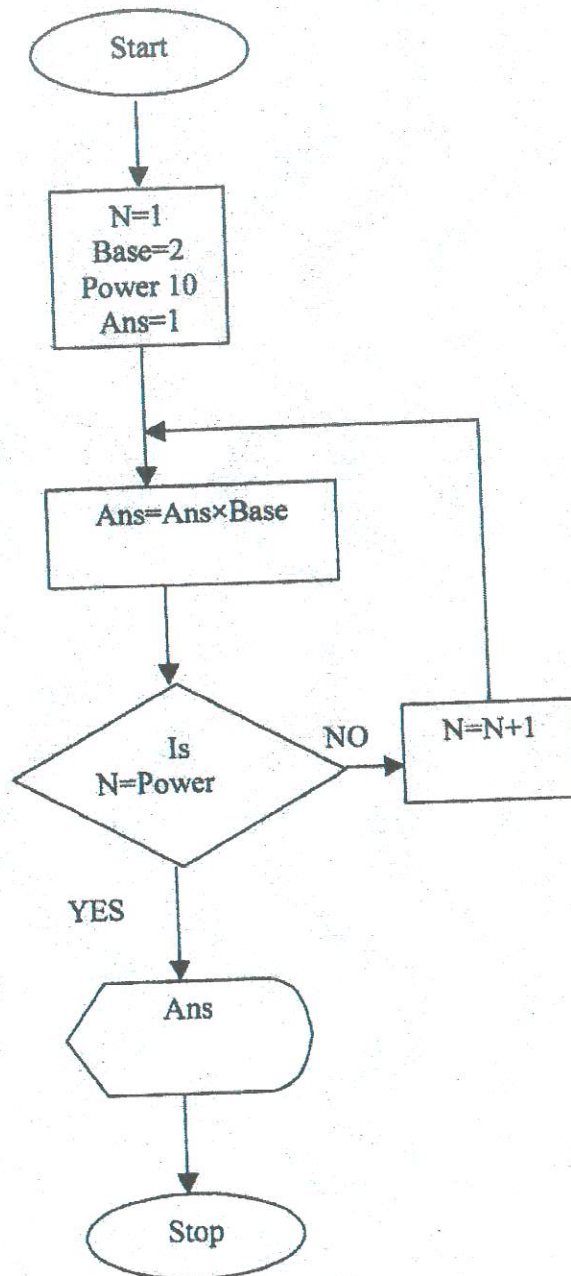


Figure 1

(a) Interpret the flowchart.

(9 marks)

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(b) Write a pseudo code for the flowchart.

(6 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 in data processing. (3 marks)

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(ii) Differentiate between *primary key* and *index key* as used in databases. (2 marks)

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18. (a) Explain two health issues that could arise from the use of unsuitable computer desk. (4 marks)

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(b) (i) Describe two ways in which a positive number and a negative number can be represented in a computer. (2 marks)

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19. (a) **Figure 2** shows a block diagram of a computer system and its peripheral devices. Use it and answer the questions that follow.

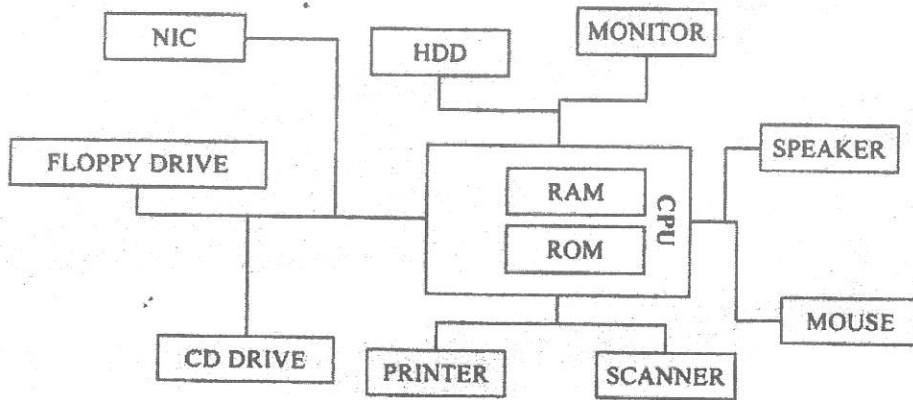


Figure 2

- (i) Name **two** devices that may be used for storing data for a long duration. (2 marks)

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- (ii) Name **three** peripheral devices 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 in order to perform his tasks effectively. (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** reasons why the customer would prefer an integrated package to separate packages. (3 marks)

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(c) (i) State the role of each of the following data communication devices:

I. repeater;

(1 mark)

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II. router.

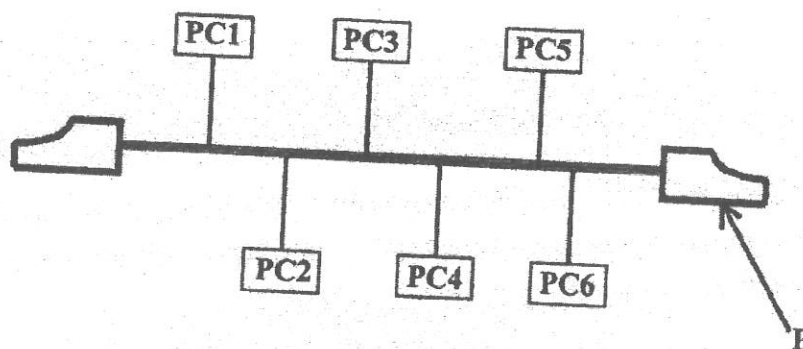
(1 mark)

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(ii) The figure below shows a network based on the bus topology.



I. Identify the component labelled P.

(1 mark)

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II. State the function of the component labelled P.

(2 marks)

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20. (a) Explain **three** ways in which an operating system provides data security in a computer system. (6 marks)

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(b) (i) State **two** instances where observation is not a viable method of gathering data during system analysis stage. (2 marks)

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(ii) Various considerations should be made during input design and output design in reference to System Development Life Cycle (SDLC). State two considerations for each case:

I. Input Design; (2 marks)

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II. Output Design. (2 marks)

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(c) An institution maintains employees' records in a database. State three benefits that the institution may gain from this approach. (3 marks)

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