

NAME..... INDEX NO.....  
 SCHOOL..... CANDIDATES SIGNATURE.....  
 DATE.....

451/1  
 COMPUTER STUDIES  
 PAPER 1  
 (THEORY)  
 JULY/AUGUST 2014  
 TIME: 2½ HOURS

**TRANS-NZOIA COUNTY JOINT EVALUATION EXAMINATION-2014**  
*Kenya Certificate of Secondary Education*

COMPUTER STUDIES  
 PAPER 1  
 (THEORY)  
 TIME: 2½ HOURS

**INSTRUCTIONS TO CANDIDATES**

- This paper consists of **TWO** Sections **A** and **B**
- Answer all questions in Section **A**
- Answer question **16 (compulsory)** and any other **THREE** question in section **B**
- All answers should be written in the space provided in the question paper

**FOR OFFICIAL USE ONLY:**

Section	Question	Candidates Score
<b>A</b>	<b>1-15</b>	
<b>B</b>	<b>16</b>	
	<b>17</b>	
	<b>18</b>	
	<b>19</b>	
	<b>20</b>	
<b>Total Score</b>		

*This paper consists of 15 printed pages.  
 Candidates should check the question paper to ascertain that  
 all pages are printed and no questions are missing*

**SECTION A: (40 MARKS)**

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

1. (a) A computer laboratory should be constantly kept dust and smoke free. Specify **two** effects that dust would have on the operation of computers. (2 marks)

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- (b) Why should you first switch on the UPS before switching on the system unit and the monitor? (1 mark)

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2. Explain the meaning of backup. (2 marks)

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3. State the following types of transcription errors. (2 marks)

- (a) 3455 instead of 3456.....  
(b) Smith instead of simth. ....

4. (a) State **three** ways used to represent a negative number. (3 marks)

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- (b) Perform the following binary arithmetic giving the answer in decimal notation.  
1110.0111 + 1101001.011 (2 marks)

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5. Distinguish between data privacy and data integrity as used in computing. (2 marks)

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6. Differentiate between a primary key and a foreign key while designing a database. (2 marks)

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7. Distinguish between 'count' and 'countif' functions as used in spreadsheets. (2 marks)

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8. Match the following statements with repeater, router or a bridge. (2 marks)

	STATEMENT	DEVICE
(a)	Operates at data link layer	
(b)	Determine the best path for data to follow	
(c)	Regenerates signals	
(d)	Forwards everything which it doesn't recognize	

9. Explain the impact of Information Technology on organization in each of the following areas. (2 marks)

(a) Competition.

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(b) Pace of growth.

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10. List **two** roles performed by system analyst. (2 marks)

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11. Explain the following internet related terms. (4 marks)

(a) Sign IN.....

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(b) Search engine.....

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(c) Surf.....

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(d) Sign up.....

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12. In Kenya Tea Packers Company, several people are employed as record clerks, typists and messenger. The company intends to introduce a computerized system in all the departments. Suggest **three** reasons that would make workers unhappy with the new system. (3 marks)

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13. State **two** magnetic Storage devices. (2 marks)

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14. State **three** functions of Central Processing Unit. (3 marks)

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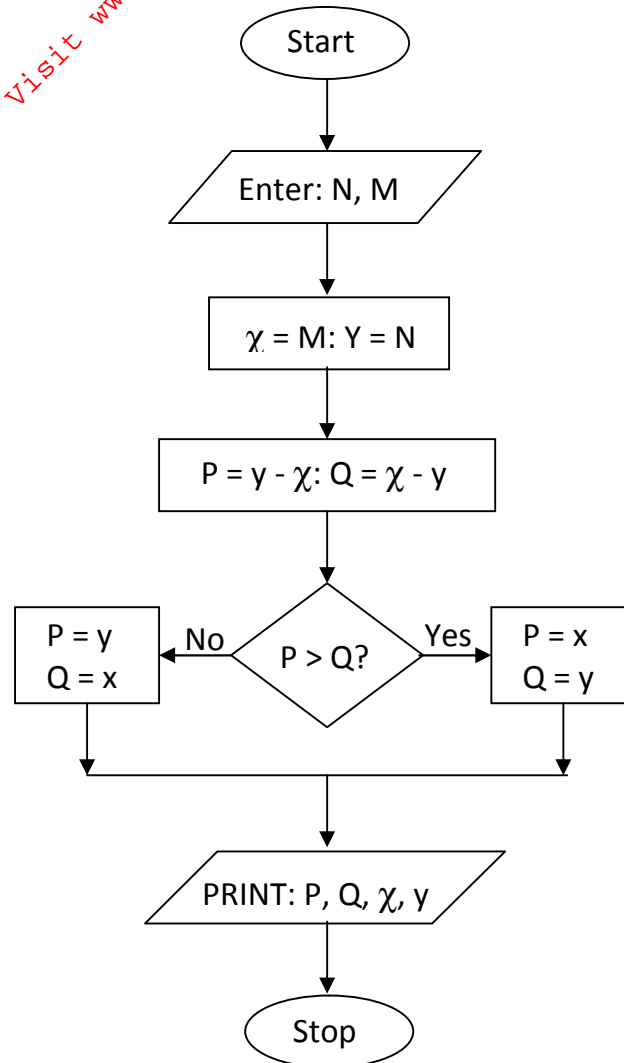
15. For each of the following file organization methods, state an appropriate storage medium: (2 marks)

- (a) Serial.....  
.....
- (b) Random.....  
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**SECTION B: (60 MARKS)**

**Answer question 16 (compulsory) and any other THREE questions from this section.**

16. (a) Study the flowchart below and answer the questions that follows.



(i) State the name of the control structure shown in the flowchart. (1 mark)

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(ii) Assuming the user keys in 8 and 14 when prompted to enter the values for m and N respectively, determine the printed values of P, Q,  $\chi$  and y. (4 marks)

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(iii) Write the pseudocode that would be used in place of the flowchart. (5 marks)

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(b) What is the difference between looping and selection. (2 marks)

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(c) Name the stage of program development cycle when: (3 marks)

(i) A user guide would be written.

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(ii) A programmer dry-runs the code.

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(iii) System charts would be drawn.

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17. (a) What is Virtual reality? (1 mark)

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(b) Explain the following interactive sensory equipment used in virtual reality. (2 marks)

(i) Head gear.

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(ii) Body suit.

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(c) (i) What is Artificial Intelligence? (1 mark)

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(ii) State and explain **three** components of an experts system. (6 marks)

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(d) Most computerized security systems make use of Biometric analysis, name **three** physical features of human beings that can be considered in this analysis.

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18. (a) Explain **two** coding schemes used in data representation techniques. (4 marks)

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(b) Using one's and two's complement work out  $14 - 9$ .

(i) One's complement. (2 marks)

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(ii) Two's complement. (2 marks)

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(c) Work out the hexadecimal equivalent of  $10111100011_2$  (2 marks)

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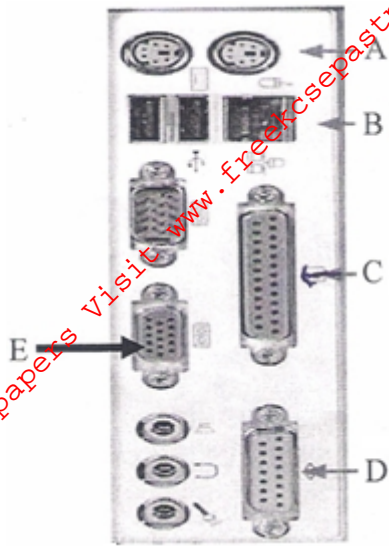
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(d) Identify the following types of ports.

(5 marks)



- A.....
- B.....
- C.....
- D.....
- F.....

19. (a) Explain **two** functions of an operating system. (4 marks)

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(b) Explain the following terms as used in disk management using operating system:  
(i) Disk defragmentation. (2 marks)

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(ii) Disk clean up. (2 marks)

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(c) What will happen if you attempt to delete a folder while a file contained in it is **Open**? (1 mark)

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(d) State **two** properties that an operating system displays about a file. (2 marks)

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(e) Give **four** advantages of storing files in folders. (4 marks)

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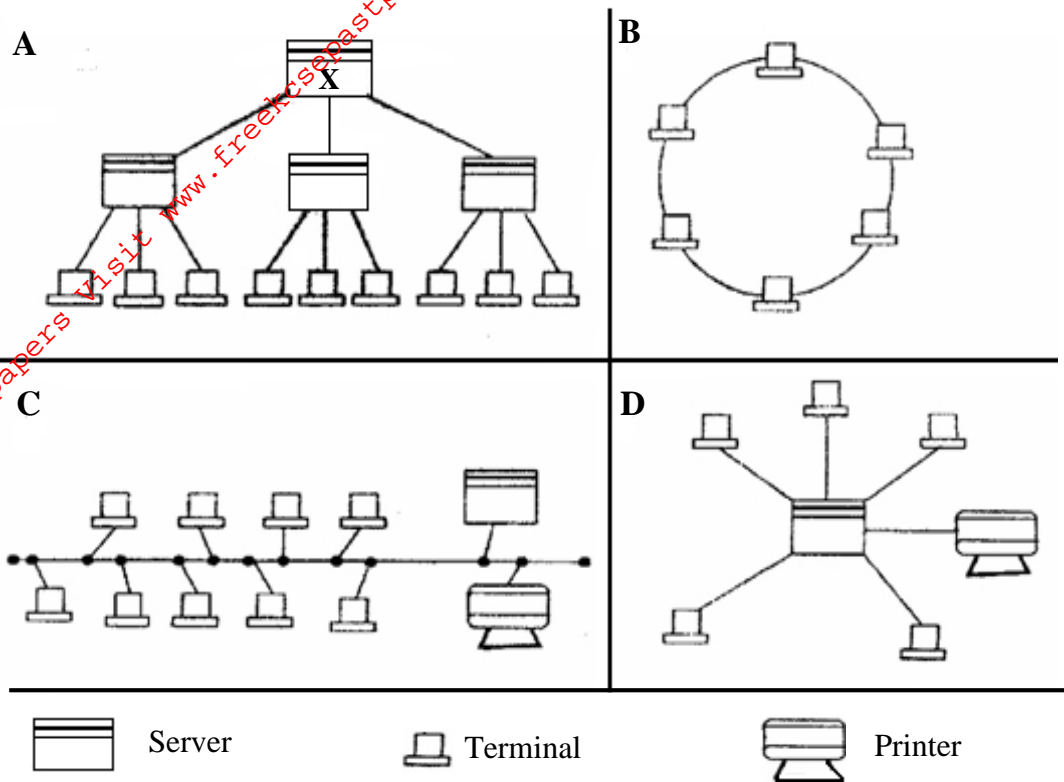
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20. (a) The diagram **below** shows four common network topologies **A**, **B**, **C** and **D**.



(i) Name the network topologies labeled **A**, **B**, **C** and **D**. (4 marks)

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(ii) Explain what happens if server X in topology **A** fails. (1 mark)

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(iii) List **two** problems associated with network topology **B**. (2 marks)

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(iv) List **two** disadvantage associated with network topology labeled **D**. (2 marks)

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(b) Differentiate between Internet and World Wide Web. (2 marks)

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(c) Describe the following network services and identify their applications. (4 marks)

(i) Voice mail.

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(ii) Video conferencing.

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