

Name Index No.

School Candidate's signature

Date

451/1

COMPUTER STUDIES

Paper 1

July/August 2016

Time 2 ½ hours

WESTLANDS JOINT EXAMINATION
Kenya Certificate of Secondary Education
COMPUTER STUDIES

Paper 1 - (451/1)

July/August 2016

Time: 2½ hours

INSTRUCTIONS TO CANDIDATES

- Write your name and index number in the spaces provided above.
- Sign and write the date of the examination in the spaces provided above
- This papers consists of two sections A and B
- Answer ALL questions in section A
- Answer questions 16 and any other THREE questions from section B
- Write answers in the spaces provided.

FOR EXAMINES USE ONLY

SECTION	QUESTION NUMBER	CANDIDATE'S SCORE
A	1 - 15	
B	16	
	17	
	18	
	19	
<i>This paper consists of 12 printed pages</i> <i>Candidates should check the question paper to ensure that all the printed pages are printed as indicated and no questions are missing.</i>		
TOTAL		

SECTION A (40 marks) Answer ALL the questions

1. Give **any** two peripheral devices which get their power supply through ports. (2 marks)

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2. Write down all the inputs devices and output devices of an ATM machine of pesa-point in Kenya. (3 marks)

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3. Distinguish between computer Aided Instruction and Computer Aided learning. (2 marks)

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4. a) Describe **four** functions of the operating system. (4 marks)

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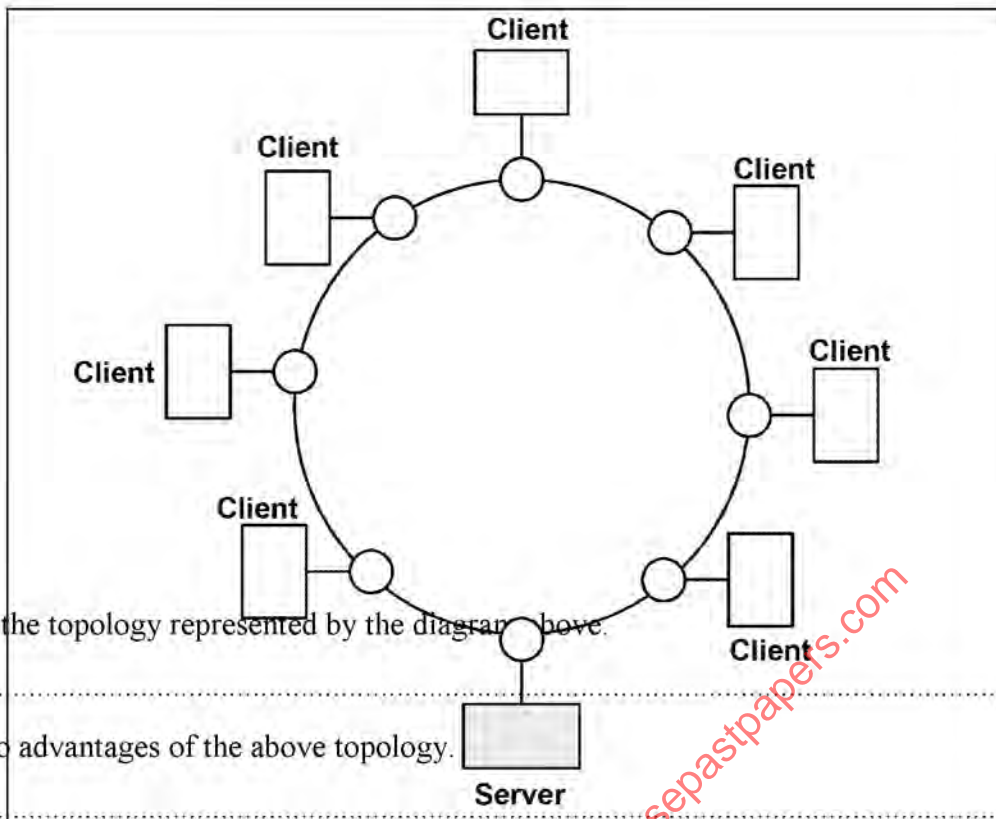
b) List any **three** techniques used by the operating system to perform job scheduling. (3 marks)

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5. State **four** computer related courses offered of National polytechnics in Kenya. (2 marks)

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6. Use the diagram below to answer the questions that follow.



a) Identify the topology represented by the diagram above. (1 mark)

b) Give two advantages of the above topology. (2 marks)

c) Explain how MSAU is used in (a) above. (1 mark)

7. Describe three factors that cause system Entropy (3 marks)

8. State two tools that a system Analyst may use to design a system. (1 mark)

9. Differentiate between cracking and hacking. (2 marks)

10. Mention four ways of controlling Repetitive strain injury. (2 marks)

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11. State two application areas of Batch processing. (2 marks)

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12. List any four non-electronic computing tools. (2 marks)

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13. Principal of Mwalimu secondary school purchased an application package from a software vendor in Kisumu. Name two items that the principal would use to measure Authenticity of this application package. (2 marks)

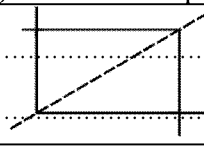
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14. a) Identify the tools shown below and state their functions as used in DTP. (2 marks)

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b) State the difference between pasteboard and printable page in DTP (2 marks)

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15.i) What is an expert system	Name	Function (1 mark)
		
ii) State two examples of Expert systems.		(1 mark)

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SECTION B (60 marks)

Answer questions 16 (COMPULSORY) and any other **three** questions from this section

16.a) List down six rules of flowcharting. (3 marks)

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b) State six advantages of 4th generation programming languages. (3 marks)

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c) List down the three stages of program compilation. (1½ marks)

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d) List down the three major control structures in programming. (1½ marks)

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e) Kenya revenue authority (KRA) collects tax on behalf of the Kenya government. Some individuals, companies and organization are exempted from paying tax while the rest pay tax based on the scale below.

Gross income is the total amount of money obtained from salaries, business, wages, farming, allowances, gifts and any other sources. Draw a flowchart to show the total tax paid by any taxpayer in a certain period. (6 marks)

AMOUNT (KSH)	TAX CHARGED
Below 8,000	No taxation
First 10,000	10% of gross income
Second 10,000	15% of gross income
Third 10,000	20% of gross income
Fourth 10,000	25% of gross income
Above 40,000	30% of gross income

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17.a) Explain the following terms as used in the internet. (2 marks)

- i) URL
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- ii) Intranets
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- iii) Firewalls
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- iv) Search engine
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b) State 8 activities that can be carried out on a webpage. (4 marks)

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c) State six features of a web browsing software. (6 marks)

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d) Write down six features of an electronic mail. (3 marks)

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18.a) Distinguish between analog and digital signals. (2 marks)

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b) Arrange the following numbers from the smallest to the largest. (2 marks)

FF_H , 330_{10} , 514_8 , 1011001_2

c) Using twos complement, perform the following arithmetic leaving the answer in binary notation. (3 marks)
5 - 3 (use 8-bits)

d) A 7 - bit coding scheme represents the letter C as 1000011, how will letter I be represented?(3 marks)

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e) Convert $3BD_{16}$ to octal. (2 marks)

f) Convert 4598_{10} to Binary. (1 mark)

g) Calculate the word length of the word COMPUTER (2 marks)

19. The following spreadsheet shows the profit or loss at an ice-cream stall during a four-week period.

i) Mention the data type in cell.

(2 marks)

a) E10

b) A7

c) D8

d) F2

ii) Write down a formula that if entered into cell D7 and copied down up to D10 will calculate the income as shown in the table. (2 marks)

ICE-CREAM STALL						
1						
2		Cost-price				7-6-2014
3	Ice Cream	3				
4	Orange	2				
5						
6		Ice Cream	Orange Juice sales	Income	Expenses	Profit/loss
7	WEEK 1	300	40	980	900	PROFIT
8	WEEK 2	250	10	770	900	LOSS
9	WEEK 3	450	10	1370	900	PROFIT
10	WEEK 4	300	20	940	900	PROFIT
11						

iii) State how the formula will appear in cell D10. (1 mark)

iv) Use R₁C₁ style to represent Cell D6. (1 mark)

v) State two formatting styles applied in cell B6 and D6. (2 marks)

vi) Write the function that will display text in

Cell F7 - F10.

(3 marks)

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e) State the cells that are needed to create the above column chart.

(2 marks)

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f) Apart from MS-Excel state four other examples of spreadsheets.

(2 marks)

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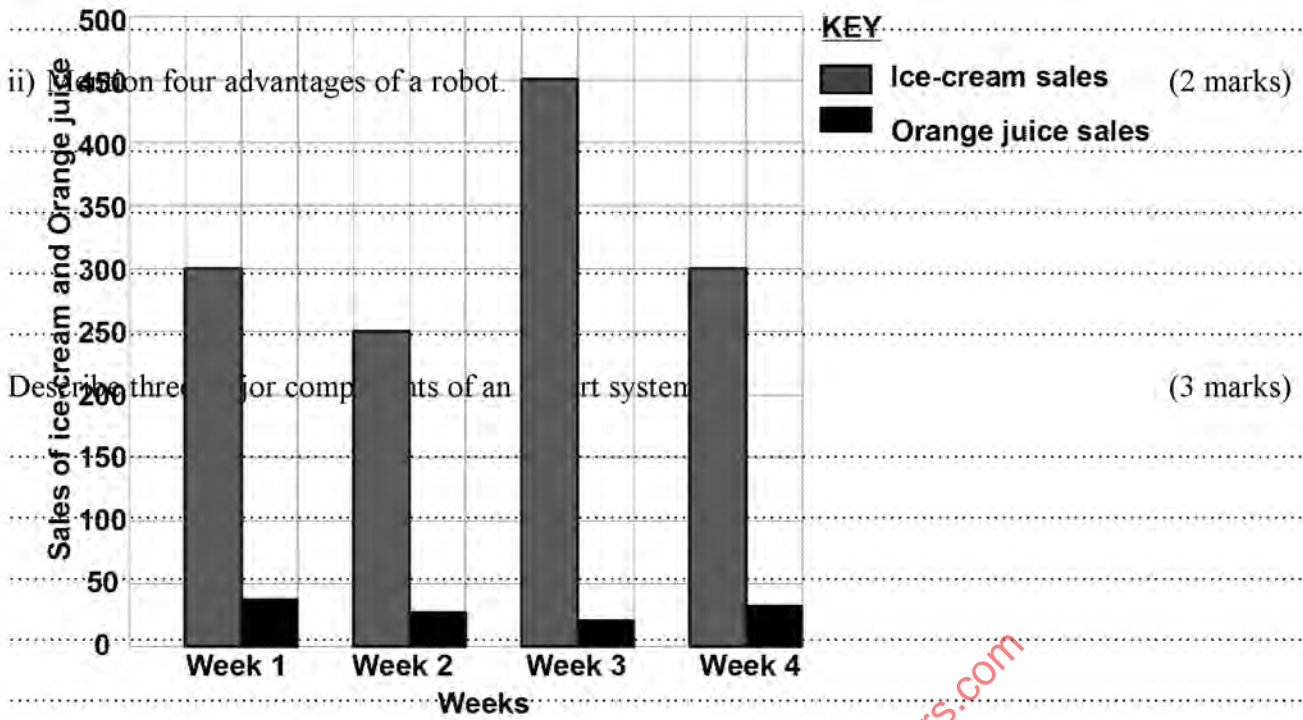
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20. a) i) What is a robot?

(1 mark)

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ii) List four advantages of a robot.

KEY
 ■ Ice-cream sales (2 marks)
 ■ Orange juice sales

b) Describe three components of an expert system. (3 marks)

c) Describe the trends in computer technology basing your argument on size, memory and speed. (3 marks)

d) What is flaming? (1 mark)

e) State four limitations of natural language processing. (2 marks)

f) Discuss three effects of ICT on employment. (3 marks)

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