

Name: Index no

School: Candidate's sign

Date:

451/1
COMPUTER STUDIES
PAPER 1
(THEORY)
JULY /AUGUST 2016
TIME 2 ½ HOURS

INSTRUCTION TO CANDIDATES

- Write your name and index number in the spaces provided above
- This paper consists of Two sections *A* and *B*.
- Answer ALL questions in section *A*.
- Answer question 16 and any other **THREE** questions from section *B*.
- All answers should be written in the spaces provided on the question paper.

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SECTION	QUESTIONS	QUESTION'S ACTUAL SCORE	CANDIDATES SCORE
A	1-15		
B	16		
	17		
	18		
	19		
	20		
	TOTAL SCORE		

This paper consists of 16 printed pages. Candidates should check the question paper to ensure that all pages are printed as indicated and no questions are missing.

1. Using the titles above write down the correct job title of the following descriptions (2mks)

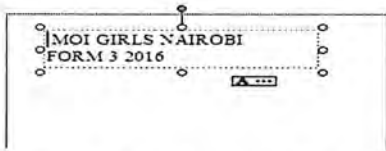
(a) Keying in data

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(b) Daily backup of information

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2. Jane is a form three computer student; as she was working on her publisher document she noticed a letter A icon below the text box she was working on as shown below.



a) What is the meaning of the icon (1mk)

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b) Advice Jane on how to get rid of the icon (1mk)

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3. Name two ways of minimizing dampness in the computer lab (1mks)

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4. a) what is the difference between character based operating system and graphical user interface operating system. (2mks)

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5. a) State two categories of input devices. (2mks)

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b) List down two factors to consider when selecting an input device (2mks)

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6. List two ways in which computers are used in education (2mks)

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7. Define the term utility software (1mk)

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8. Describe the use of the following utilities

(3mks)

(i) Linkers

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(ii) Debuggers

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(ii) Loaders

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9. The spreadsheet shows the computer equipment on loan to staff member in a company. Cells B13 and C7:E13 contain formulae.

1	A	B	C	D	E
2	PC SOFTWARE DEVELOPMENT LTD				
3	Ref: 2106				
4	Computer Equipment on loan to:			S.Harrison	
5					
6	Item	Year 1	Year 2	Year 3	Year 4
7	PC system	1600	800	400	200
8	Notebook computer	1000	500	250	125
9	Hand-held computer	320	160	80	40
10	Laptop case	80	40	20	10
11	PC cover	16	8	4	2
12	Mouse mat	8	4	2	1
13	Total value(\$)	3024	1512	756	378

(a) State the cell that contains a data item (1mk)

(b) Describe how the numbers in the range of cells **B7:E13** can be changed to include money symbols. (2mks)

(c) Give a formula that could be in cell B13 to calculate the total value of the equipment in year 1. (1mk)

(d) Each year the value of the equipment is halved. State a formula that could be in cell C7 to calculate the value of the PC system in year 2. (2mks)

10. Define the following computer crimes (2mks)

(i) Piracy

(ii) Industrial espionage

11. Describe the following terms as used in internet.

(4mks)

i. Webpage

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ii. Blog

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iii. Hyperlinks

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iv. Web portal

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12. Differentiate between the following terms as used in word processing

(3mks)

(a) Drop cap and case

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(b) Superscript and subscript

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(c) Indent and tab

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13. a) The most popular type of electronic data storage currently use magnetic disk storage such as hard disks or Winchester disk. Give reasons as to why they are popular. (2mks)

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b) Outline two advantages of hard disks over floppy disks. (2mks)

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14) Explain how the operating system controls the following resources (3mks)

(i) Processor

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(ii) Main memory

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(iii) Input and output devices

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15) Explain the term deadlock in reference to operating system. (1mk)

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SECTION B

16. i) Distinguish between interpreters and compilers (2mks)

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ii) State any **two** activities that occur in a program compilation process. (2mks)

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iii) Define the term structured programming (1mk)

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b) A programmer uses a program design tools to design a program that can list the odd numbers between 0 and 100.

i) Draw a flowchart to solve the above problem (6mks)

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- c) Write a pseudocode to compare three non-equal numeric values A,B,C and print the largest of the three (4mks)

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17. The following car details are to be entered in a database: **Make, date-of-manufacture, color and cost.**

(a) Prepare a suitable database structure showing field names and their field types.

(4mks)

(c) Write a statement that can be used to select cars of colour green.

(2mks)

(d) Give an instruction that would:

(i) Select cars whose cost is between 500,000/- and 1,000,000/-

(3mks)

(ii) Determine the average cost of all cars.

(3mks)

(e) John was working on his database and an error message "type mismatch" appeared on his screen.

(i) Explain the cause of the error message

(2mks)

(ii) Advice john on how to correct the error message

(1mk)

18. a) Convert $91C_{16}$ to octal

(3mks)

b) Perform the following binary arithmetic calculations giving the answers in decimal notations

(2mks)

1. $1110.01111_2 + 11010001.011_2$

2. $1001011.011_2 + 111.111_2$

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c) Using two's complement, subtract 27 from 5 in binary form, give the answer in decimal notation. (4mks)

d) Using one's complement subtract 011_2 from 1001_2 . (3mks)

e) Convert the number 7.03125_{10} to its binary equivalent. (3mks)

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19. Differentiate between the following terms

(6mks)

b) Share level security and user level security

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c) Peer to peer and server based network

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d) Radio and microwave.

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e) Outline any **three** functions of Network operating systems

(3mks)

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i) Describe the importance of open system interconnection (OSI) model in networking

(1mk)

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ii) Name and explain the functionality of any two OSI model layers.

(4mks)

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f) Describe the VSAT technology as used in networking

(1mk)

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20.a) Explain how the operating system perform the following functions:

i) Job sequencing

(2mks)

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ii) Job scheduling

(2mks)

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b) State three criteria for classifying operating system and give one type in each case

(3mks)

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c) Explain one reason why organizations may need to change to a new computerized system

(2mks)

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d) State why each of the following is important in system documentation:

(i) Sample data

(1mk)

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(ii) Output reports

(1mk)

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(e) A teacher manages students' records by storing daily attendance information in a file called register and students' personal records such as year of birth and home address in a file called students.

(i) Identify the types of computer files named above.

(2mks)

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(ii) Give a characteristic of data held in each file

(2mks)

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