NAME……………………………………………………………………………………

INDEX NO. …………………………………………….ADM NO……………

CANDIDATES'S SIGNATURE ………………..……CLASS .……………………

451/1
COMPUTER STUDIES
PAPER 1
MARCH/APRIL 2015
2 ½ HOURS

MOKASA JOINT EVALUATION EXAMINATION

Kenya Certificate of Secondary Education (KCSE)

Instructions to Candidates
- Write your Name, Index number and Admission number in spaces provided above.
- This paper consists **TWO** sections.
- Answer **ALL** questions in section **A**.
- Answer Question 16 and any other **THREE** Questions from Section **B**
- All answers MUST be written in the spaces provided on this question paper.

For Examiner's Use Only

Questions	Maximum Score	Actual Score
1-15	40	
16	15	
17	15	
18	15	
19	15	
20	15	
TOTAL		

Section A (40 Marks)
Answer ALL Questions from this section

1. A multi-national company allows employees to telework or work at home and communicate with the office using the Internet. List the hardware, software and services required to access and use the Internet. (3 Marks)

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2. Mr. Kala wants to buy a printer to use in his automobile workshop for printing sales orders in duplicates. He has approached you for advice. What printer should he buy? (1 Mark)

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Give a reason for your answer. (1 Mark)

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3. Explain why a DVD has a high storage capacity compared to a CD. (2 Marks)

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4. Using a well labelled diagram, describe the fetch and execute cycle. (3 Marks)

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5. Explain any two factors to consider when evaluating the suitability of a room for a computer laboratory. (2 Marks)

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6. Distinguish between OCR and OMR (2 Marks)

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7. State any two advantages of the artificial intelligence. (2 Marks)

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8. (a) The word COM appears several times in an essay. Jane would like to change the word to COMPUTER. Advice her on how she can accomplish this task using a word processor. (2 Marks)

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(b) Differentiate between widows and orphans as used in Word processing. (2 Marks)

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9. State the functions of the following word processing editing features. (2 Marks)
(a) Thesaurus

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(b) Grammar checker

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10. (a) Rose wants to send an email to Jack. Explain two items that must be present for the mail to be sent. (2 Mark)

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    (b) (i) Define the term network protocol (1 Mark)

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    (ii) Name any **two** examples of network protocols (1 Mark)

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11. (a) What is the importance of layering in DTP? (1 Mark)

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(b) Distinguish between column guides and margin guides as used in DTP. (2 Marks)

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12. Study the work sheet below and answer the questions that follow:

	A	B	C	D	E	F
1						
2	**MOKASA MIXED HIGH SCHOOL**					
3	**ADM. NO**	**NAME**	**MATHS**	**ENGLISH**	**AVERAGE**	**RANK**
4	1001	Akinyi	78	85		
5	1002	Kamau	89	77		
6	1003	Leila	45	46		
7	1004	Taita	67	69		
8	1005	Mosomtany	98	67		
9	**Highest Score**					
10	**Lowest Score**					
11	**Average Score**					

(a) Write a formula that would be entered in cell E4 to compute the average score for Akinyi.

(1 Mark)

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(b) Write down a formula that used to return the rank of Leila based on average score.

(1 Mark)

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(c) Write down a formula that would return the number of students whose score in English is below 70. (1 Mark)

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13. The manager of a company wants to improve the security of the computer network. She has decided to use authentication techniques so that employees can identify themselves to the system. Name **two** authentication techniques and describe how each technique would help keep the data more secure. (3 Marks)

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14. Mary who works as a systems analyst for JeroKin investments has produced documentation for a newly developed system. State three reasons why both user and technical documentation are needed. (3 Marks)

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15. Environmentalists plan to test a fast flowing river for pollution. State two advantages of using a computer to do this rather than doing it manually.

(2 Marks)

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SECTION B (60 marks)

Answer questions 16 and any other three questions from this section.

16. (a) Name two different types of loop structure in a typical programming language

(1 Mark)

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(b) For each loop named in (a) above write a pseudocode to illustrate how ten numbers could be input and their average returned using the named loop.

(4 Marks)

Type 1 loop

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Type 2 loop   (4 Marks)

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(c) A school wants to monitor the number of hours spent by a class of 30 students on the Internet.

Using a flowchart write an algorithm which will;

- for each student, record the times logged on and logged off
- calculate the length of time each student spends online
- calculate and output the average length of time per day spent by each student on the Internet

Assume that a student only logs on and off once a day.   (6 Marks)

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17. (a) Explain three different types of feasibility that system investigation and system analysis must consider. (3 Marks)

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(b) (i) State the any two reasons of systems maintenance. (2 Marks)

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(ii) State any two activities involved in systems maintenance. (2 Marks)

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(c) A shop owner wants to change from a manual stock control system to a computerised stock control system.
(i) State three reasons why the shop owner would want a computerised system.
(3 Marks)

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(ii) Describe any two methods of fact-finding that would be used to analyse the manual stock control system. (2 Marks)

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(d) (i) State two types of computer crimes. (1 Mark)

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(b) Describe two ways of protecting against computer crime. (2 Marks)

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18. (a) Draw and label a diagram to show the relationship between a root directory, a subdirectory and a file. (3 Marks)

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(b) State three file management tasks that are carried out by an operating system.
(3 Marks)

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(c) Explain how the operating system deals with errors that occur while a program is running. (2 Marks)

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(d) One purpose of most operating systems is to provide a human computer interface (HCI).
  (i) Describe the following HCIs and give an example of an application which would use each:
  (i) Menu based (1 ½ Marks)

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  (ii) Natural language (1 ½ Marks)

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(d) In business, a computer user may use two types of application software; general purpose and special purpose software.
 (i) Distinguish between the two. (2 Marks)

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(ii) An employee uses a special-purpose package. Explain how his subsequent actions will be different from using a general-purpose package. (2 Marks)

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19. (a) Explain any three methods of representing negative numbers in computers.
(3 Marks)

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(b) Using 8 bits and twos complement, subtract 33_{10} from 12_{10}, giving your answer in decimal notation. (3 Marks)

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(c) Determine the value of X in the equations: (1 ½ Marks)
   (i) $1001101_2 - X_2 = 11010_2$

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   (ii) $X_2 + 11101_2 = 100_{10}$ (1 ½ Marks)

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(d) (i) Using a well labelled diagram describe timesharing processing mode.
(3 Marks)

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(ii) State two advantages and two disadvantages of centralized processing mode.
(2 Marks)

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20. (a) A school has a cabled LAN. The head teacher of the school wants to replace it
with a WLAN.
(i) Explain the differences between a cabled LAN and a WLAN.   (2 Marks)

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(ii) State two advantages and two disadvantages of having a WLAN.   (2 Marks)

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(b) (i) Computer networks can be classified according to functional relationships which
exist among the network elements. Identify the networks represented below. (2 Marks)
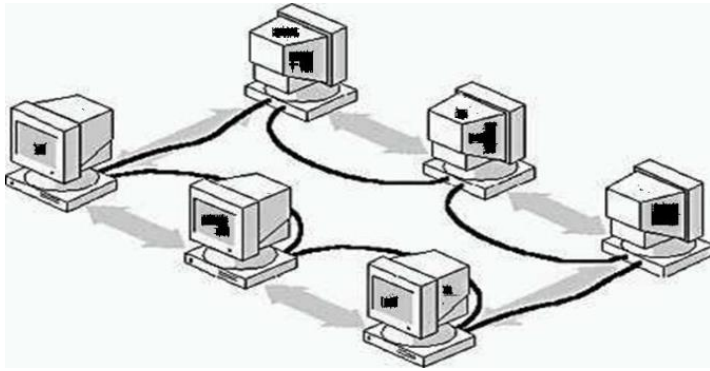
Figure 1_____
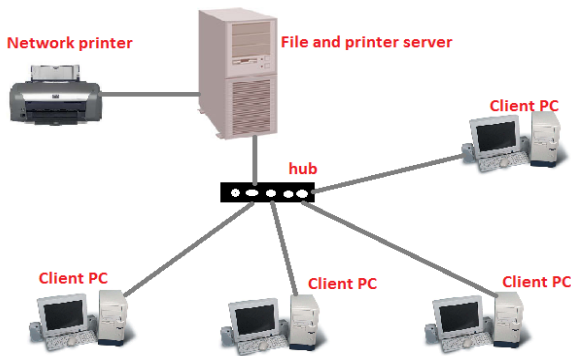
Figure 2_____

(ii) State one advantage and one disadvantage of each of the networks identified in (i) above.   (2 Marks)

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(c) MOKASA library has a file for storing details of the books it has and a file for storing details of its borrowers as shown below. The files are linked using a common field. Use this information to answer the questions that follow.

Book File

BOOK CODE	TITLE	AUTHOR	PUBLISHED	NUMBER IN STOCK	COST
700021	A hoe cannot lie	Sabrina Awuor	2013	45	900
700025	Laughter the medicine	Wasswa Bbaale	2012	8	670
700035	Disabled? Not I	Oteng'o Rangaga	2014	9	700
700055	Drama, my passion.	Gatsibwage Chumo	2011	4	800

Borrower File

ADMISSION NUMBER	FIRST NAME	LAST NAME	FORM	BOOK BORROWED	DATE DUE
76002	Mola	Konale	4 S	700021	12/3/2015
77001	Joseph	Magange	4 P	700025	13/3/2015
7709	Georgina	Silwal	4 N	700055	12/3/2015
7800	Harry	Arudhi	4 E	700035	11/3/2015

(i) How many field values are there in the book file?   (½ Mark)

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(ii) What type of database do these two files form?   (½ Mark)

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 (iii) State two reasons why this type of database system is used rather than having two flat files.   (2 Marks)

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 (d) (i) List any four database models.   (2 Marks)

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    (ii) Distinguish between a primary key and a foreign key.   (2 Marks)

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451/2
COMPUTER STUDIES
Paper 2
(PRACTICAL)
MARCH/APRIL 2015
2 ½ hours

MOKASA JOINT EVALUATION EXAMINATION
Kenya Certificate of Secondary Education
COMPUTER STUDIES
Paper 2
2 ½ hours

Instructions to Candidates
1. *Type your name and index number at the top right hand corner of each printout.*
2. *Sign and write the date of the examination below the name and index number on each printout.*
3. *Write your name and index number on the compact disks.*
4. *Write the name and version of the software used for each question attempted in the answer sheet.*
5. *Passwords **should not be used** while saving in the compact disks.*
6. *Answer all the questions.*
7. *All questions carry equal marks.*
8. *All answers must be saved in your compact disks.*
9. *Make a printout of the answers on the answer sheets provided.*
10. *Hand in all the printouts and the compact disks.*
11. **This paper consists of 4 printed pages.**
12. **Candidates should check the question paper to ascertain that all pages are printed as indicated and that no questions are missing.**

1. (a) Create a folder named **Harper**. Type the document below exactly as it appears using a word processing package and save it as MOCKING_BIRD in the folder created.   (8mks)

TO KILL A MOCKINGBIRD
To Kill a Mockingbird is primarily a novel about growing up under extraordinary circumstances in the 1930s in the Soutern United States. In To Kill a Mockingbird, author Harper Lee uses memorable characters to explore civil rights and rasism in the segregated Southern United States of the 1930s.

Told through the eyes of Scout Finch, you learn about her father Atticus Finch, an attorney who hopelessly strives to prove the innocence of a black man unjustly accused of rape; and about Boo Radley, a mysterious neighbor who saves Scout and her brother Jem from being killed.

The Three Most Important Aspects Of To Kill A Mockingbird:

The title of To Kill a Mockingbird refers to the local belief, introduced early in the novel and referred to again later, that it is a sin to kill a mockingbird. Harper Lee implies that it's unjust and immoral.

The events of To Kill a Mockingbird take place while Scout Finch, the novel's narrator, is a young child. But the sophisticated vocabulary and sentence structure of the story indicate that Scout tells the story many years after the events described, when she has grown to adulthood.

To Kill a Mockingbird is unusual because it is both an examination of racism and a bildungsroman. Lee examines a very serious social problem. Lee seamlessly blends these two very different kinds of stories.
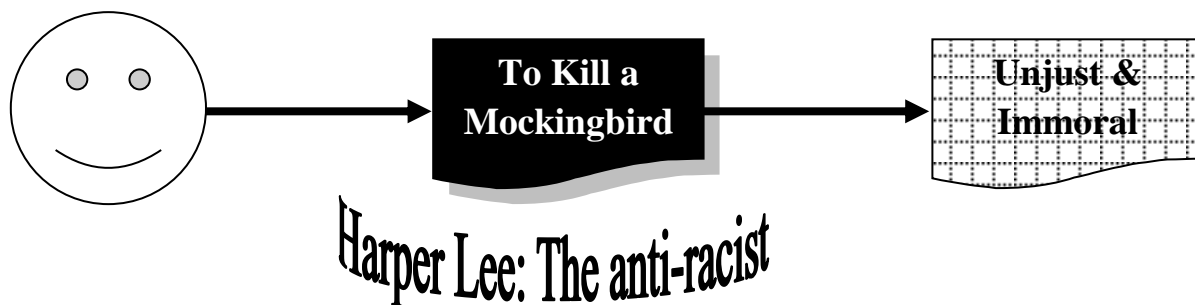
(b) Save a copy of the document created above as "MOCKING_BIRD 2" in the folder created in (a) above and use to answer parts (c) to (e).   (1mrk)

(c) (i)   Insert a drop cap to the first letter of the first paragraph, dropping it by two lines.   (2mks)

   (ii)   Apply bullets to the paragraphs under the second heading.   (3mks)

   (iii)   Change the first paragraph under the first heading to three columns.   (3mks)

   (iv)   Format the heading "**TO KILL A MOCKINGBIRD**" as follows: (4mks)
   - **Alignment**:   Right
   - **Font type**:   Arial black
   - **Font size**:   18
   - **Font style**:   Underline
   (v)   Proofread the document to correct spelling mistakes   (1mrk)

(vi)   Set the page to A4 size, with the following margin specifications: (3mks)
- **Top:**   0.63"
- **Bottom:** 0.6"
- **Left:**   0.6"
- **Right:**   0.63"

(vii)   Set the line spacing of the last two paragraphs starting with "To Kill a Mockingbird is unusual..." to 2.0.   (2mks)

(viii) Insert a header bearing your name and admission number.   (2mks)

(ix)   Move the 1st paragraph under the second heading to come below the drawing.   (2mks)

(x)   Set a hanging indent to the 2nd paragraph which starts with "To Kill a Mockingbird is unusual…"   (2mks)

(xi)   Replace all words written "racism" with "racial discrimination"   (2mks)

(xii)   Set the 1st paragraph which starts with "To Kill a Mockingbird is primarily a…" so as the text is aligned to the right.   (1mk)

(e) Automatically paginate the document using the format **"page x of y"**   (1mk)

(f) Apply a page border to the whole document with the following formats: (3mks)
- **Style**:   Double line
- **Border color**:   Blue
- **Border width**:   2¼pt

(g)   (i) Create a table at the end of the document created in (b) above and enter the following data   (3mks)

BOOK _NO	BOOK_TITTLE	AUTHOR	PRICE
B0-02	In Cold Blood	Truman capote	875.00
B0-09	Roman Holiday	Gregory Peck	955.00
B0-03	The catcher in the Rye	J. D. Salinger	650.00

(ii) Insert the title "RELATED BOOK NOVELS" as the first row of the table. Align the title to the center   (2mks)

(iii) Apply borders to the whole table   (1mk)

(iv) Using a formula, calculate the average cost of books in the table.   (2mks)

(h) Print the documents; MOCKING_BIRD and MOCKING_BIRD 2   (2mks)

2. The tables below, **STUDENT, SUPERVISOR** and **SUPERVISIONS** are extracts of records kept in MOKASA UNIVERSIRY for project supervisions.

Student Number	Name	Gender	Project Fee Paid
C001	Ken	M	32000
C002	Joy	F	27800
C003	Lero	M	18900
C004	Moth	F	42700
C005	Ben	M	45000

Table 1 STUDENTS TABLE

Supervisor Number	Name	Department
L220	Alex	Mechanical
L230	Sakaja	ICT
L240	Roy	Electronics
L250	Mati	Education
L260	Joy	Human Resource

Table 2 SUPERVISOR S' TABLE

Supervision Number	Supervision Date	Student Number	Supervisor Number	Project Title
100	12/03/2015	C001	L220	Java
200	22/03/2015	C003	L230	Website
300	17/03/2015	C004	L240	Robotics
400	02/03/2015	C001	L220	Java
500	18/03/2015	C002	L240	Robotics
600	12/03/2015	C004	L230	Java
700	11/03/2015	C002	L250	Database
800	12/03/2015	C003	L220	Java
900	12/04/2015	C005	L250	Database
1100	12/04/2015	C002	L250	Database

Table 3 SUPERVISIONS TABLE

a) Using a database application software, create a database file named **PROJECT** (1mk)

b) Create three tables named **STUDENT, SUPERVISOR** and **SUPERVISIONS** as shown above. (9mks)

c) Set the primary key for each table. (3mks)

d) Create relationships among the tables. (2mks)

e) Enter the data in the table **STUDENT, SUPERVISOR** and **SUPERVISIONS** as shown above. (9mks)

f) Create a form for each table above. (3mks)

g) Create a query named **BALANCE** to display student name, Gender, project fee balance per student, given that the total project fee is **Ksh.50000**. (4mks)

h) Create a query named **BALANCE2** to display students' Names, project title whose fee balance is above **Ksh.20000.** . (4mks)

i) Create a bar chart based on question (h) to display students Name and balance. Save as
BALANCE CHART. (3mks)

j) Create a report named SUPERVISION to display Students Names, Project Title, names of
supervisor, and supervision Dates. The records in the report should be grouped by students' Name
and the number of supervisions by each student should be displayed. (5mks)

k) Title the report as supervision per lecturer. (2mks)

l) Print the following:
- **Tables**: STUDENT, SUPERVISOR and SUPERVISIONS (2mks)
- **Queries**: BALANCE and BALANCE2 (2mks)
- **REPORT**: SUPERVISIONS (1mk)