

# **KCSE 2024 REGIONAL MOCKS**

## **COMPUTER STUDIES**

*The PDF Comprises of A Compilation of 4  
Top Joint National Mocks Administered  
across the 47 Counties for KCSE Class of  
November 2024*

**For Marking Schemes:**

**Call/ Text/ Whatsapp  
0724333200/0795491185/  
0768321553**

***Mr Machuki***

**Or**

**Visit or website**

**[www.kenyaeducators.co.ke](http://www.kenyaeducators.co.ke)**

**KENYA EDUCATORS CONSULTANCY**

# ***Table of Contents***

<b>1.</b>	<b>Nairobi &amp; Central Joint National mocks 2024</b>
<b>2.</b>	<b>Nyanza &amp; Western Joint National mocks 2024</b>
<b>3.</b>	<b>Coastal &amp; Eastern Joint National mocks 2024</b>
<b>4.</b>	<b>Rift Valley &amp; North Eastern Joint National mocks 2024</b>

**Confidential!!!**

***Success to all KCSE 2024 Candidates***

**KENYA EDUCATORS CONSULTANCY**

**MINISTRY OF EDUCATION (KNEC COMPLIANT)**

Name: \_\_\_\_\_ Adm. No \_\_\_\_\_

Index No: \_\_\_\_\_ School: \_\_\_\_\_

Candidate's Sign \_\_\_\_\_ Date: \_\_\_\_\_

451/1

**Computer Studies**

**Paper 1 [Theory]**

**Class of KCSE 2024**

**Time: 2 ½ Hours**

**THE NAIROBI & CENTRAL REGIONS KCSE**  
**JOINT NATIONAL MOCK 2024**

***Kenya Certificate of Secondary Education (KCSE)***

**Instructions to candidates:**

- [a]. Write your name and index number in the spaces provided at the top of this page.
- [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 question **16** and **any other THREE** questions from section **B**.
- [e]. All answers should be written in the space provided on the question paper
- [f]. This paper consists of 8 printed pages
- [g]. Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.

**For Examiner's Use only**

Section	Question	Maximum Score	Candidate's Score
A	1-15		
B	16		
	17		
	18		
	19		
	20		
<b>Total score</b>	<b>100</b>		

**MINISTRY OF EDUCATION (KNEC COMPLIANT)**

**SECTION A [40 MARKS]**

Answer *all* questions in this section

1. Outline **three** distinctions between a super computer and microcomputer. [3 marks]

---

---

---

---

2. State four features of fifth generation computers. [4 marks]

---

---

---

---

- 3.(a). Explain **two** uses of forms in database design. [2 mark]

---

---

---

---

- (b). i). Define the term control as used in report and form design. (1 mark)

---

---

- (ii). Explain briefly the difference between bound and unbound controls. (2marks)

---

---

---

---

4. State any **two** differences between function keys and special keys of a keyboard. [2 marks]

**MINISTRY OF EDUCATION (KNEC COMPLIANT)**

---

---

---

---

5. In system development, testing is one of the critical stages. Give **three** reasons why the testing phase is critical to the systems developer. [3 marks]

---

---

---

6. Write the following abbreviations in full. [3 marks]

i). BCD

ii). ASCII

iii). EBCDIC

7. State **two** properties that an operating system display about a file. [1 mark]

---

---

8. Differentiate between Computer Aided Design CAD and Computer Aided Manufacture (CAM). [4 marks]

---

---

---

---

9. (a). Distinguish between a primary key and index key as used in databases. [2 marks]

---

---

---

**MINISTRY OF EDUCATION (KNEC COMPLIANT)**

(b). Explain the relevance of foreign key in a database entity. (1 mark)

---

---

10. List **three** differences between laser printer and a dot matrix printer. [3 marks]

---

---

---

11. Name an input or output device used in the following tasks. (2 mark)

a). Capturing still images

---

(b). Printing detailed architectural designs

---

(c). Playing flight and driving games

---

(d). Capture data at ATM

---

12. What is the use of the search and replace feature in a word-processor. (1 mark)

---

---

13. State two ways in which a computer may be used in efficient running of a hospital. (2 marks)

---

---

14. The formula = \$A4\*C\$3 was entered in cell D4. What will be the formula if it is copied to cell F10. [1 marks]

---

---

---

15. Name any three methods that can be used to test a program of errors. (3 marks)

**MINISTRY OF EDUCATION (KNEC COMPLIANT)**

---

---

---

**SECTION B [60 MARKS]**

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

16.[a]. Design a flowchart for a simple program that can be used to categorize people according to age. If the person is above or equal 18 years, output “Adult” otherwise output “Young”.

(8 marks)

**MINISTRY OF EDUCATION (KNEC COMPLIANT)**

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

---

---

---

[c]. Name the stage of program development cycle when: [2 marks]

(i). A user guide would be written

---

(ii). A programmer dry-turn the code

---

(iii). System charts would be drawn

---

(iv). Staff training is done

---

(d). State the three translators used in programming. (3 marks)

---

---

---

17.(a). Define the term data communication. (1 mark)

---

(b). Explain the following terms as used in data communication. (2 marks)

(i). Bandwidth

---

---

(ii). Attenuation

---

---

(c). Explain the following three types of computer networks. (3 marks)

i). LAN



**MINISTRY OF EDUCATION (KNEC COMPLIANT)**

ii). MAN

iii). WAN

(d).i). What are robots? (1 marks)

(ii). Outline any four advantages of using robots in industries over human beings. (2 marks)

(e). Describe the following communication modes giving an example in each case. (6 marks)

(i). Simplex

(ii). Half duplex

(iii). Full duplex

18. [a].List two characteristics of good information. [2 marks]

**MINISTRY OF EDUCATION (KNEC COMPLIANT)**

(b)(i). What is a database management system? [1 mark]

---

---

(ii). State and explain three database models. (3 marks)

---

---

c). Describe the following types of files.

(i). Master file (2 marks)

---

---

(ii). Backup file (2 marks)

---

---

(iii). Transaction file (2 marks)

---

---

d). Explain the file organization methods given below.

(i). Serial (1 mark)

---

---

(ii). Indexed sequential (1 mark)

---

---

(iii). Random (1 mark)

---

---

19. (a). A shopkeeper of a small shop at Longisa has bought desktop computer to assist him in performing his business activities. He has been advised that before he can use it to work he has to install it with an operating system. State any six factors to consider when choosing the operating system. [6 marks]

---

---

---

---

---

---

**MINISTRY OF EDUCATION (KNEC COMPLIANT)**

---

---

---

b). With reference to disk management explain what is meant by the terms below.

i). Formatting (1 mark)

---

---

---

ii). Defragmentation (1 mark)

---

---

---

iii). Disk partitioning (1 mark)

---

---

---

c). Give any two reasons that may make the shopkeeper to partition the computer disk. [2 marks]

---

---

---

(d). The shopkeeper one day switched on the computer and experienced a number of problems with windows operating system that he had installed. The problems included failure to load the operating system during the booting. After several trials of switching on the computer, it hangs so often alongside abnormal restarting. State any four possible causes for the computer's behaviour.

(4 marks)

---

---

---

---

**MINISTRY OF EDUCATION (KNEC COMPLIANT)**

---

---

20. (a) Describe the octal number system. (2 marks)

---

---

(b). Convert each of the following to the number system indicated:

i).  $111.101_2$  to decimal; (3 marks)

---

---

---

(ii).  $14.6875_{10}$  to binary [4 marks]

---

---

---

(c). Convert the number  $-17_{10}$  into 8-bit:

(i). signed magnitude representation; (2 marks)

---

---

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

---

---

(d). Perform the arithmetic operation. (2 marks)

$$110.11_2 + 11.011_2$$

**MINISTRY OF EDUCATION (KNEC COMPLIANT)**

Name: \_\_\_\_\_ Adm. No \_\_\_\_\_

Index No: \_\_\_\_\_ School: \_\_\_\_\_

Candidate's Sign \_\_\_\_\_ Date: \_\_\_\_\_

451/2

Computer Studies

Paper 1 [Practical]

Class of KCSE 2024

Time: 2 ½ Hours

**THE NAIROBI & CENTRAL REGIONS KCSE**  
**JOINT NATIONAL MOCK 2024**

***Kenya Certificate of Secondary Education (KCSE)***

**Instructions to candidates**

- Type your name and Index No at the top right hand corner of each printout.
- Write your name and Index No on the CD-R/CD-RW
- Write the name and version of the software used for each question attempted in the answer sheet.
- Passwords **should not** be used while saving in the CD.
- Answer **all** questions
- All questions carry equal marks
- All answers must be saved in your CD.
- Make printouts of the answers on the answer sheets provided
- Hand in all the **printout** and the **CD**
- Candidates may be penalized for not following instruction given in this paper
- Arrange your printout and staple them together.

*Candidates should check the question paper to ascertain that  
all pages are printed and no questions are missing*

**MINISTRY OF EDUCATION (KNEC COMPLIANT)**

1.

(a). Type the following letter as it appears in a word processor. Use the mail merge feature to produce copies of the same letter to the persons whose details are given below. (12 marks)

MWANGAZA HIGH  
SCHOOL

P.O. BOX 4800

KERICHO

8<sup>TH</sup> FEBRUARY 2020

<NAME>,<ADMNO>,

<ADDRESS>

<TOWN>

Dear <NAME>

REF: 2019 KCSE RESULTS.

I am happy to inform you that the NOV-DEC Examinations are out. Kindly arrange to visit our school on <Date to visit> at 9.00 a.m in order to know the details. Remember to carry your original KCPE certificate and examination registration card bearing the index number.

Yours's truly,

Head teacher

Data source (List of Candidates)

Name	Adm.No	Address	Town	Date to visit
Mark Otieno	8074	P.O. BOX 24	Sondu	02/03/2020

**MINISTRY OF EDUCATION (KNEC COMPLIANT)**

Kevin Kirui	8189	P.O. BOX 172	Kericho	08/03/2020
Bernard Soi	8065	P.O. BOX 84	Bomet	24/03/2020

**Required:**

- i) **Save** Main document as Main Doc (1 mark)
- ii) **Save** Data source as Data source  
(1 mark)
- iii) **Change** the addresses and reference font size to 14pts  
(1 ½ marks)

2. Perfect Pizza Factory manufactures pasta for distribution to restaurants in Nairobi. Assuming that you are now working for the factory and have been given the following sales data:

	A	B	C	D	E	F	G	H	I
1	Restaurants	July	August	September	October	November	December	Total product sales	Average
2		34567	45671	89650	67222	56113	96282		
3	Nankos	100000	97600	82199	105999	140664	190654		
4	Burgees	96543	97600	82199	105999	140663	190654		
5	Kenge	65000	97600	82199	105669	140663	190654		
6	Tika	103456	97645	82297	105669	140220	175000		
7	Appetos	76899	85400	96709	101324	140882	181230		

**MINISTRY OF EDUCATION (KNEC COMPLIANT)**

8	Marries	9800 0	97600	82199	10599 9	140663	190654		
9	Generals	2500 0	19654	15222	8000	5602	200		
1 0	My Café	8677 7	75432	84366	10599 9	55678	201345		
1 1	Shooters								
1 2									
1 3									
1 4	Total Monthly sales								

(iv). **Underline** the reference  
( $\frac{1}{2}$  mark)

(v). **Merge** the letter onto main document so as to produce copies for all the three candidates and save it as 'Results 2019'.  
(6 marks)

(vi). **Print** the letters  
(3 marks)

(b). **Type** the following text in a word processing software.  
(22 marks)

**INTRODUCTION TO COMPUTERS & OPERATING SYSTEMS**

A computer is a machine or an electronic device that can solve problems by accepting data, performing certain operations on that data (processing) and presenting the results of those operations (Information) Basic characteristics that distinguish a computer from other information processing devices:-

- (i) A computer is electronic- That is, all its processing operations are carried out with electrical signals



## **MINISTRY OF EDUCATION (KNEC COMPLIANT)**

- (ii) A computer can store information for future reference. This is done on temporary basis with memory circuits and permanently with storage devices such as magnetic disks and tape.
- (iii) A computer is programmable – unlike other devices built to perform a single function, a computer can be instructed or programmed to perform a variety of tasks.

### ***HOW A COMPUTER OPERATES***

Converting the data (raw facts) into information (Organized, usable form) is called data processing.

Data get into the system by means of an input device.e.g keyboard then the computer performs the necessary calculations or manipulations on the data and finally the organized information is displayed by an output device e.g. a monitor.

### ***FUNCTIONS PERFORMED BY A COMPUTER***

Although computers have many applications, they can perform only three basic tasks.

- (i). Arithmetic functions on numeric data (adding, subtracting, multiplying and dividing)
- (ii). Test relationships between data items (by comparing values)
- (iii). Store and retrieve data

These skills are really no more than people can do, but the computer can accomplish the task more;

- Faster
- Accurately
- Reliably

### **Required:**

- (a). **Align** the title to the centre and underline it.  
(1 marks)
- (b). **Add** border to the title (2 marks)

**MINISTRY OF EDUCATION (KNEC COMPLIANT)**

(c). **Replace** all the Roman numbers with bullets.

(2 marks)

(d).

(i) Insert the footer “End of Term One Examination 2020”. (2 marks)

(ii) Insert the header “Your name and index No”

(2 marks)

**MINISTRY OF EDUCATION (KNEC COMPLIANT)**

NAME \_\_\_\_\_ INDEX NO. \_\_\_\_\_

SIGNATURE \_\_\_\_\_ DATE \_\_\_\_\_

451/1  
COMPUTER STUDIES  
PAPER 1  
THEORY  
TIME: 2½ HOUR

**THE NYANZA & WESTERN REGIONS KCSE**  
**JOINT NATIONAL MOCK 2024**  
*Kenya Certificate of Secondary Education (KCSE)*

451/1  
COMPUTER STUDIES  
PAPER 1  
THEORY  
TIME: 2½ HOURS

**INSTRUCTIONS TO CANDIDATES:**

- Write your name and index number in the spaces provided above.
- Write the date of examination and sign in the spaces provided.
- This paper consists of **two** sections.
- Answer **all** the questions in section **A**.
- Answer question **16** (compulsory) and **any other three** questions from section **B**.
- All answers **must** be written in the spaces provided in this question paper.

**FOR EXAMINER'S USE ONLY**

SECTION	QUESTION	MAXIMUM SCORE	ACTUAL SCORE
A	1 - 15	40	
B	16	15	
		15	
		15	
		15	
		TOTAL SCORE	

*This paper consists of 13 printed pages. Candidates should check to ensure that all pages are printed as indicated and no questions are missing.*

**MINISTRY OF EDUCATION (KNEC COMPLIANT)**

**SECTION A (40 MARKS)**

**ANSWER ALL THE QUESTIONS FROM THIS SECTION IN THE SPACES PROVIDED**

1. One of the functions of an operating system is to control computer resources. State three resources under operating system control (3 marks)

---

---

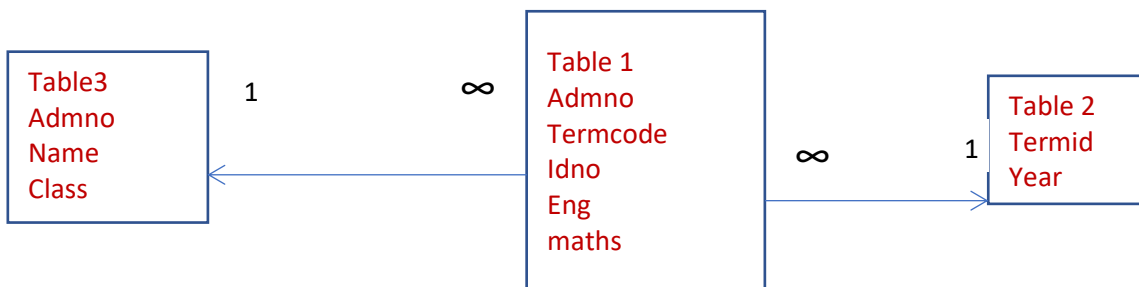
---

---

---

---

2. (a) The figure below shows the relationship between tables in a database.



Identify two primary keys and two foreign keys used in the relationships (2 marks)

---

---

---

---

(b) Distinguish between bound and unbound controls as used in database forms (2 marks)

---

---

**MINISTRY OF EDUCATION (KNEC COMPLIANT)**

---

---

3. Explain why an impact printer is suitable for printing multiple copies (2 marks)

---

---

---

---

4. State any four examples of document readers (2 marks)

---

---

---

---

5. (a) Define the term simulation (1 mark)

---

---

---

(b) List two educational areas where simulation programs can be used (1 mark)

---

---

---

6. Explain two ways of protecting data and information against unauthorized access (2 marks)

---

---

---

---

7. Explain two characteristics of good information (2 marks)

---

---

**MINISTRY OF EDUCATION (KNEC COMPLIANT)**

---

---

8. Explain three types of errors that are likely to exist in a program (3 marks)

---

---

---

---

---

---

---

---

9. State two roles of a network administrator (2 marks)

---

---

---

10. State three negative impacts of information communication technology on the environment (3 marks)

---

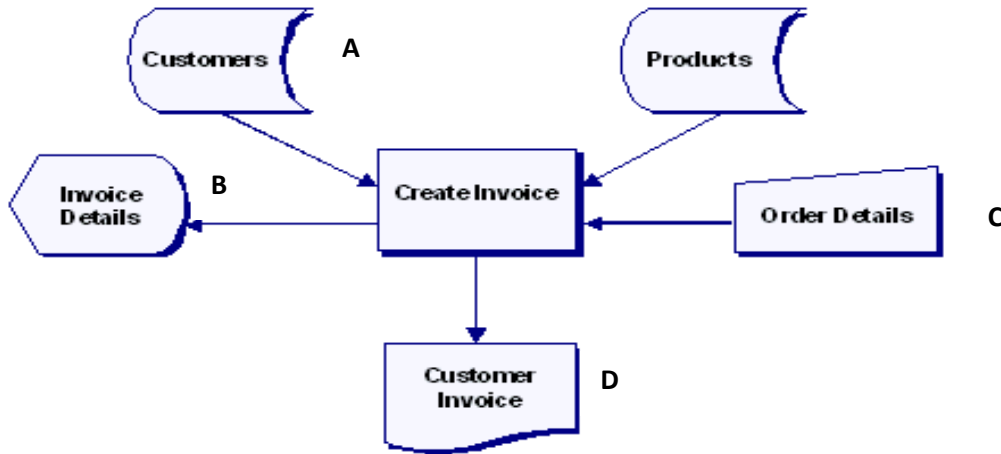
---

---

---

11. Study the follow flowchart then answer the questions that flow.

**MINISTRY OF EDUCATION (KNEC COMPLIANT)**



i. Identify the type of flowchart represented by the flowchart in figure (1 mark)

---

---

ii. Name the flowchart symbols labeled A, B,C and D in the flowchart. (2 marks)

---

---

---

---

---

---

12. Mary a computer student noticed that every time a person enters the computer lab, the computer screen flickered. Identify three reasons why the monitor might be flickering (3marks)

---

---

---

---

---

---

---

**MINISTRY OF EDUCATION (KNEC COMPLIANT)**

13. (a) state the importance of column breaks as used in a word processor (1 mark)

---

---

---

(b) List any two line spacing specifications used in Ms- Word (1 mark)

---

---

---

14. The first column in the table below contains the formula stored in cell C10 of a spreadsheet. Enter the formula as they would appear when copied to cell F15 of the same spreadsheet (2 marks)

FORMULA IN C10	FORMULA IN F15
=A5*B5	
=4*B\$6	

15. (a) Differentiate between an analog and digital data signal (2 marks)

---

---

---

(b) The government of Kenya is in the process of laying out fibre optic cables throughout the country. State three advantages of fibre optic cables (3 marks)

---

---

---

---





**MINISTRY OF EDUCATION (KNEC COMPLIANT)**

---

---

---

---

(c) (i) List two benefits of using interviews as a method of fact finding  
(2 marks)

---

---

---

---

(ii) Explain three types of system change over strategies (3 marks)

---

---

---

---

---

---

---

---

17. (a) state three functions of a database management system (DBMS) (3 marks)

---

---

---

---

---

**MINISTRY OF EDUCATION (KNEC COMPLIANT)**

(b) if a database was to be created for a list, Tables, Forms, Queries and Reports are likely to be used. State the purpose of each of the objects (4 marks)

---

---

---

---

---

---

c) The information below is maintained by Jessica Fruit store. Study it and answer the questions that follow:

Product number	Product name	Qty in stock (kg)	Value per unit (ksh)
001	Peach	1000	200
002	Oranges	1200	200
003	Mangoes	1300	100

Write down the query statements you can use to list the following;

i) Product names starting with letter P. (2 marks)

---

---

ii) Value per unit below 200. (2 marks)

---

---

(d) The following is a spreadsheet relating to a farmer (2 marks)

**MINISTRY OF EDUCATION (KNEC COMPLIANT)**

	A	B	C
1	Crop	Amount	
2	Maize	150	
3	Bean	300	
4	Cashew nuts	850	
5	Cabbages	1036	

A function = IF (B2<200, "Not Viable", IF (B2>300, "Moderate", IF (B2>1000, "Viable"))).  
Give the appropriate result returned in cells C2, C3, C4 and C5

d) Name **four** data types used in spreadsheets. (2 Marks)

---

---

---

---

---

---

18. (a) Explain the use of the following commands found in the spell check dialog box in reference to word processing (3 Marks)

i)Change

---

ii)Ignoreonce

---

iii)Add

---

**MINISTRY OF EDUCATION (KNEC COMPLIANT)**

(b) State four font styles supported by Ms. Word  
(2marks)

---

---

---

---

---

---

(c) Work out the following binary arithmetic  
(2marks)

i.  $11101.0011_2 + 101.011_2$

---

---

---

---

---

---

ii.  $101001.10101_2 - 110.01101_2$

---

---

---

---

---

---

iii. Using twos complement, perform the following calculation.  
(4marks)

$23_{10} - 41_{10}$



**MINISTRY OF EDUCATION (KNEC COMPLIANT)**

---

---

---

---

---

---

19 ( a) Explain each of the following type of operating systems (4marks)

i. Distributed

---

---

---

---

---

ii. Multi-user.

---

---

---

---

---

b) List any two types of embedded operating systems used in modern cell phones (2marks)

---

---

---

c) Most operating systems provide a *file system*. Mention any TWO file systems used in windows environment. (2 marks)

**MINISTRY OF EDUCATION (KNEC COMPLIANT)**

---

---

---

(d) Define the term interactive data processing.

(1mark)

---

---

---

(e) Explain why input screens are better data entry designs than entering data directly a table. (2 marks)

---

---

---

(f) State two likely causes of data and program loss in a computer system? 2 marks)

---

---

---

(g) Explain the meaning of the following terms as used in data security (2marks)

a. Fraud

---

---

---

b. Alteration



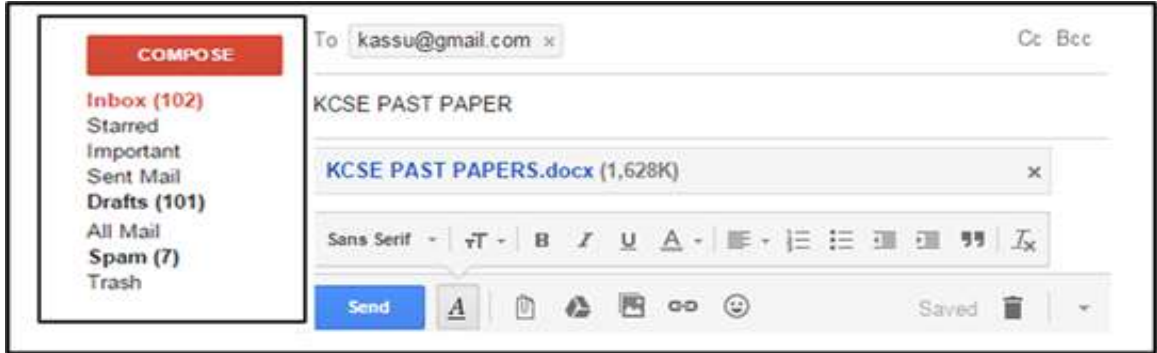
**MINISTRY OF EDUCATION (KNEC COMPLIANT)**

---

---

---

20. (a) The figure below shows an extract of an e-mail application.



State what is meant by the following (3 marks)

(a) Trash

---

---

(b) Spam

---

---

(c) Inbox

---

---

b) Explain the following interactive sensory equipment used in virtual reality

(2marks)

i) Head gear

---

---

---

ii) Body suit

**MINISTRY OF EDUCATION (KNEC COMPLIANT)**

---

---

---

c) Most computerized security systems make use of Biometric analysis, name **three** physical features of human beings that can be considered in this analysis  
(3marks)

---

---

---

---

d) (i) Define the term networking topology  
(1mark)

---

---

---

e) (ii) Distinguish between logical and physical network topologies  
(2marks)

---

---

---

---

(d) Explain the functions of the following network devices (4marks)

(i) Network interface card (NIC)

**MINISTRY OF EDUCATION (KNEC COMPLIANT)**

---

---

---

(ii) Gateway

---

---

---

(iii) Bridge

---

---

---

(iv) Repeater

---

---

---

**MINISTRY OF EDUCATION (KNEC COMPLIANT)**

NAME \_\_\_\_\_ INDEX NO. \_\_\_\_\_

SIGNATURE \_\_\_\_\_ DATE \_\_\_\_\_

451/2

**COMPUTER STUDIES**

**PAPER 1**

**PRACTICAL**

**TIME: 2½ HOUR**

**THE NYANZA & WESTERN REGIONS KCSE**

**JOINT NATIONAL MOCK 2024**

*Kenya Certificate of Secondary Education (KCSE)*

**INSTRUCTIONS TO CANDIDATES**

- This paper has **two** questions.
- Answer all the **questions**.
- All questions carry equal **marks**.
- Type your name and index number at the right hand corner of each print out.
- Write your name and index number on the storage medium provided.
- Write your name and version of software used for each question attempted.
- Passwords **should not** be used while saving in your work.
- Make a printout of the answers on the answer sheets provided
- Hand all the **print outs** and the **storage medium**
- This paper consists of **4** printed pages
- Candidates should check to ensure that all pages are printed as indicated and no questions are missing.

**MINISTRY OF EDUCATION (KNEC COMPLIANT)**

1. a) Kipto’s milling company limited has given you the details below to be used in calculating expenses incurred during two quarters of the year as indicated. Use a spreadsheet package to enter the details, and save your work as Expenses 1. (10 marks)

	A	B	C	D	E	F	G
1	<b><u>KIPTO’S MILLING COMPANY LIMITED</u></b>						
2	<b><u>P.O BOX 625 NAKURU</u></b>						
3		<b>First quarter</b>			<b>Second quarter</b>		
4		<b>January</b>	<b>February</b>	<b>March</b>	<b>April</b>	<b>May</b>	<b>June</b>
5	Production cost	15642	14687	18741	19457	15412	15441
6	Transportation	1564	1469	1874	1946	1541	1544
7	Warehousing	1125	1056	1347	1398	1107	1109
8	Promotion	2564	2407	3071	3188	2525	2530
9	Salary	4525	4248	5420	5626	4456	4465

- b) i) Copy the details of Kipto’s milling company limited to sheet 2 of your worksheet. (2marks)
- ii) Add a column called “Total” and calculate the Total production cost of the two Quarters. (4marks)
- iii) Use relative referencing to calculate the total for the other expenses. (4marks)
- c) i) Calculate the total expenses for each month so as to give the results as “Total expenses” on row 10. (4marks)
- ii) On the paper provided, write the formula used to calculate the expenses for the month of April. (2marks)
- d) i) Use absolute referencing to calculate the cumulative total expenses for the two quarters in cell H10. (4marks)
- ii) Write the formula used to get the cumulative total on the paper provided. (2marks)

**MINISTRY OF EDUCATION (KNEC COMPLIANT)**

- iii) Calculate the percentage of total expenses of the respective months and display the results on row 11 as “percentage of total expenses”. (4marks)
- iv) Write the formulae used to get the percentage of May. (2marks)
- v) Draw a line graph to illustrate the percentage of the total expenses for the six months indicating the months. Save your work as Expenses 2. (10 marks)
- vi) Print Expenses 1 and Expenses 2.  
(2marks)

**MINISTRY OF EDUCATION (KNEC COMPLIANT)**

2. a) A hospital uses a database to maintain data about its employees.  
Create a database file named **EMPLOYEE**. (1 mark)
- b) Create a table called **EMPLOYEE 1** with the following fields and hence enter data into it as shown in fig 1 below. NB: Choose an appropriate primary key. (14 marks)
- EMP NO
  - NAME
  - DATE OF BIRTH
  - DEPARTMENT
  - BASIC PAY

**Fig 1**

<b>Emp</b>	<b>Name</b>	<b>Date of birth</b>	<b>Department</b>	<b>Gross pay</b>
01	John Kirui	16/2/1972	Computer	28000
02	Margaret Wairimu	2/2/1960	Medical	30000
03	Jane Cheronno	2/5/1970	Management	15000
04	Victor Oduor	8/12/1981	Accounts	25000
05	Harry Wanyama	23/6/1983	Medical	30000
06	Jacob Kiprono	19/4/1973	Management	45000
07	Ali Mohammed	1/1/1969	Medical	30000
08	Daniel Omondi	3/5/1983	Accounts	25000
09	Everlyne Kitune	11/3/1971	Medical	20000
10	Nancy Kerubo	22/9/1980	Medical	20000

- c) i) Insert **two** new fields to hold the employee's profession and deductions. (4 marks)
- ii) Data for included fields is as follows;

**Profession**

Mohammed, Wanyama and Wairimu are Doctors. Oduor and Omondi are accountants.

**MINISTRY OF EDUCATION (KNEC COMPLIANT)**

Kiprono isan Administrator, Kirui is a systems analyst and Cherono is a secretary.

**Deductions**

Emp no	Amount
07, 05, 02	8,000
04, 08	7,500
06	10,000
01	12,000
03	3,500
09, 10	4,000

Enter the above data into the respective fields.

(6 marks)

iii) Sort the records in ascending order based on the name field and save as EMPLOYEE 2.

(3marks)

d) i) From EMPLOYEE 2, extract a list of employees who were born between 1960 and 1972 both years inclusive and are accountants, nurses or doctors. Write down on paper provided the query expression you used to extract the data. Save the extracted list as LIST1. (8marks)

ii) Remove the date and occupation criteria on LIST 1. Add a calculated field to calculate the Net pay of all employees as Gross Pay - Deductions. Save as LIST 2. (5marks)

e) Generate a columnar report based on LIST 2 with the following fields; Emp no, Name, Department and Net Pay. Sum up the Net Pay for all employees in the report. Save your report as REPORT.

(6marks)

f) Print EMPLOYEE1, EMPLOYEE2, LIST1, LIST 2 and REPORT.

(3marks)



**MINISTRY OF EDUCATION (KNEC COMPLIANT)**

Name..... Index Number.....

Admission Number..... Class.....

Date.....

**451/1**

**COMPUTER STUDIES**

**Paper 1**

**CLASS OF KCSE 2024**

**2½hrs**

**THE COASTAL & EASTERN REGIONS KCSE**  
**JOINT NATIONAL MOCKS 2024**  
**Kenya Certificate Of Secondary Education (KCSE)**

**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** questions in section B.
- All answers should be written in the spaces provided in the question paper

**FOR EXAMINER'S USE ONLY.**

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

**MINISTRY OF EDUCATION (KNEC COMPLIANT)**

**SECTION A (40 MARKS)**

Answer all questions from this section in the spaces provided

1. List the components of a computer system hardware.

(2 Marks)

.....  
.....  
.....

2. Describe the term key to storage systems

(1 Mark)

.....  
.....  
.....

3. One classification of software is system software

- (a) i. What is meant by system software

(1 Mark)

.....  
.....  
.....

- ii. Give one example of system software.

(1 Mark)

.....  
.....  
.....

- (b) i. Name one other software classification

(1 Mark)

.....  
.....  
.....

**MINISTRY OF EDUCATION (KNEC COMPLIANT)**

ii. Give one example of this type of software

(1 Mark)

.....  
.....  
.....

4. a. What do you understand by the term database management system? (DBMS)?

(1 Mark)

.....  
.....  
.....

b. Define the following terms as used in a database.

(2 Marks)

i. Primary Key

.....  
.....

ii. Record

.....  
.....

5. Differentiate between COMports and LPT ports

(2 Marks)

.....  
.....  
.....

6. List three factors to consider when deciding on the choice of electronic data processing method (3 Marks)

.....  
.....

**MINISTRY OF EDUCATION (KNEC COMPLIANT)**

.....  
.....

7. Ventilation is an important practice in the computer lab because it enhances proper circulation of air.

Outline three ways in which air is regulated in the computer room.

(3 Marks)

.....  
.....  
.....  
.....

8. What do the following control measures against computer crime involve?

(4 Marks)

a. Audit trail

.....  
.....

b. Data encryption

.....  
.....

c. Log files

.....  
.....

d. Passwords

.....  
.....

9. Highlight the use of find and replace features in word processors.

(2 Marks)

**MINISTRY OF EDUCATION (KNEC COMPLIANT)**

.....  
.....  
.....

10. Explain why two's complement is preferred to one's complement in computing.

(1 mark)

.....  
.....  
.....

11. Computers have evolved through a number of generations. List any three characteristics of the first generation of computers.

(3 marks)

.....  
.....  
.....  
.....

12. List four formatting techniques used in Ms excel

(2 Marks)

.....  
.....  
.....  
.....  
.....

13. List four examples of flat panel displays.

(2 Marks)

.....  
.....  
.....  
.....  
.....

**MINISTRY OF EDUCATION (KNEC COMPLIANT)**

14. Explain the following terms as used in the word processing.

(4 Marks)

a. Indenting

.....  
.....

b. Alignment

.....  
.....

c. Footnote

.....  
.....

d. Endnote

.....  
.....

15. Describe the role of an operating system in

i. Memory management

.....  
.....

ii. Job scheduling

.....  
.....

iii. Error handling

.....  
.....

iv. Resource control

**MINISTRY OF EDUCATION (KNEC COMPLIANT)**

.....  
.....

**SECTION B (60 MARKS)**

16. a. State the three basic types of program control structures.

(3 Marks)

.....  
.....  
.....  
.....

b. Draw a flowchart which will simulate the processing of student's report. The simulation should be such that the user repeatedly inputs marks per subject for six subjects using a looping control structure. The computer processes the total marks and mean score of the student.

NOTE:

1. It is assumed that the student does six subjects
2. The output required are: Average score and total marks

c. Differentiate between analogue and digital data.

(2 Marks)

**MINISTRY OF EDUCATION (KNEC COMPLIANT)**

.....  
.....  
.....  
.....  
.....

d. Outline three advantages of using computers for data processing over other types of office and business equipment.

.....  
.....  
.....  
.....

17. a. Convert the following numbers to their decimal equivalent.

(6 Marks)

i.  $11.011_2$

.....  
.....  
.....

ii.  $12.15_8$

.....  
.....  
.....

iii.  $A3.3/6$

.....  
.....  
.....

b. Outline four ways in which data integrity may be maintained.

(4 Marks)



**MINISTRY OF EDUCATION (KNEC COMPLIANT)**

.....  
.....  
.....  
.....  
.....

c. Explain four advantages of using questionnaires as a fact finding tool.  
(4 Marks)

.....  
.....  
.....  
.....  
.....

d. What is the role of a recycle bin?  
(1 Mark)

.....  
.....

18. a. Masai teacher’s college has decided to automate its library for effective services to the students. Identify four methods they are likely to use to gather information during system development. (4 Marks)

.....  
.....  
.....  
.....  
.....

b. What do the following terms mean in relation to internet?  
(4 Marks)

i. Downloading

**MINISTRY OF EDUCATION (KNEC COMPLIANT)**

.....  
.....

ii. Hyperlink

.....  
.....

iii. Web browsers

.....  
.....

(iv)Internet service providers

.....  
.....

c. Differentiate between sorting and filtering as used in electronic spreadsheet program (2 Marks)

.....  
.....  
.....  
.....

d. What do the following terms mean

i. Spam mail

.....  
.....  
.....

ii. Disk

.....  
.....  
.....

**MINISTRY OF EDUCATION (KNEC COMPLIANT)**

iii. Onboard modern

.....  
.....  
.....

e. What does the term WIMP mean as used in computing?

.....  
.....  
.....

19. (a) Define a database model

(1Mark)

.....  
.....  
.....

b. List four advantages of using database systems

(2marks)

.....  
.....  
.....  
.....  
.....

c. In a database system, data integrity ensures the correctness and completeness of the data in the database. Differentiate the following types of integrity constraints:

i. Validity integrity

(1mark)

.....  
.....

**MINISTRY OF EDUCATION (KNEC COMPLIANT)**

ii. Entity integrity  
(1mark)

.....  
.....

iii. Referential integrity  
(1mark)

.....  
.....

d. Briefly describe the three database models  
(3 Marks)

.....  
.....  
.....  
.....

e. Using diagrams describe the following three types of relationships.  
(3Marks)

i. One - to - one

ii. One - to - many

iii. Many - to - many

**MINISTRY OF EDUCATION (KNEC COMPLIANT)**

f. File organization refers to the arrangement of records on secondary storage.  
Briefly describe the following file organization methods.

(3 Marks)

i. Serial

.....  
.....

ii. Sequential

.....  
.....

iii. Random

.....  
.....

20. a. Your School has decided to replace its library control system. The current system was implemented ten years ago but has restricted reporting facilities and has a text – based interface. The school intends to replace the old system with a new computerized system, and is now considering both ‘parallel running’ and ‘direct changeover’

i. Briefly explain the terms parallel running and direct change over as used in system implementation.

(2 Marks)

**MINISTRY OF EDUCATION (KNEC COMPLIANT)**

.....  
.....  
.....  
ii. Give two disadvantages of direct changeover overparallel running  
(1 Marks)

.....  
.....  
.....

iii. Identify two main risks of direct changeover during system implementation  
(2 Marks)

.....  
.....  
.....

iv. Mention any two advantages of running both the manual system and the  
computerized system simultaneously  
(2 Marks)

.....  
.....  
.....

b. i. What is a website? (2 marks)

.....  
.....  
.....

ii. Name three facilities that are needed to connect to the internet.  
(3 Marks)

.....  
.....



**MINISTRY OF EDUCATION (KNEC COMPLIANT)**

**Name.....Index Number.....**

**Admission Number.....Class.....**

**Date.....**

**451/2**

**COMPUTER STUDIES**

**Paper 2**

**CLASS OF KCSE 2024**

**2½hrs**

**THE COASTAL & EASTERN REGIONS KCSE**  
**JOINT NATIONAL MOCKS 2024**

**Kenya Certificate Of Secondary Education (KCSE)**

**INSTRUCTIONS TO CANDIDATES**

- (a) Type your name and index number at the top right hand corner of each print out
- (b) Write your name and index number on the diskette/CD-R provided
- (c) Write the name and version of software used in each question on the answer sheet
- (d) Answer **ALL** the questions
- (e) Passwords **should not be used** while saving in the diskette/CD-R
- (f) All answers **MUST** be saved in the diskette/CD-R
- (g) Make print out of answers on the answer sheet provided

**FOR EXAMINER'S USE ONLY**

Question	Candidate's score
1	
2	
Total score	

*This paper consists of 4 printed pages.*

*Candidates should check to ensure that all pages are printed as indicated and no questions are missing*



**MINISTRY OF EDUCATION (KNEC COMPLIANT)**

**QUESTION ONE**

1. (a) Assume you are the Director AMACO INSURANCE COMPANY LTD you want to update your customers on the current dues as per the insurance cover each client have. Use mail merge to write an official letter to **FIVE CUSTOMERS** informing them of this. Your letter must meet the following conditions.

- i. Must have the header at the top with the company's name as the letter head  
(2mks)
- ii. Must have footer at the bottom indicating the current date and time, left aligned.  
(2mks)
- iii. The insurance will cover the vehicles and each client due, car number will not be the same. (2mks)

iv The address lines will include

Title

First name

Last name

Address

Country

Car no plate

Amount due

(14mks)

**MINISTRY OF EDUCATION (KNEC COMPLIANT)**

(b) (i) Prepare the table below in Ms word and then apply formatting as follows and save as MSS (8 mks)

<b>MEYSA SYSTEMS AND SERVICES</b>				
<b>Technical information</b>			<b>Action taken</b>	
Machine	Problems found		Diagnostic checks	Solutions
Compaq / evo	hardware	software	Memory video	1 Replacing vga
6522	<input type="checkbox"/>	<input type="checkbox"/>	Faulty component	2 Installing drivers
Desktop	No display		VGA CARD	3 Rebooting system

**MINISTRY OF EDUCATION (KNEC COMPLIANT)**

(ii) Format the table with border line colour red and choose double line

(5mks)

(iii) Shade the table to tight green colour for the first two rows and light blue shading for therest of the table

(5mks)

(c) Type the paragraph below, save it as computer and apply formatting as stated

(4mks)

Computer Program is a set of instructions that direct a computer to perform some processing function or combination of functions. For the instructions to be carried out a computer must execute a program, that is, the computer reads the program, and then follows the steps encoded in the program in a precise order until completion. A program can be executed many different times, with each execution yielding a potentially different result depending upon the options and data that the user gives the computer.

(i) The text "computer program" should be the title, change its case to upper case font

TREBUCHET

MS size 16, colour green

(2mks)

(ii). Find the word 'instructions' look for its meaning in the computer dictionary and finally replacethe word

with new meaning from the dictionary

(3mks)

(iii). Format the whole paragraph to justified alignment shading colour light green

(3mks)

NAME	BASIC PAY	DEPARTMENT	AGE	STATUS
Peter	15000	Computer	34	Single
John	17000	Computer	44	Married
Kamau	19000	Finance	33	Divorced
Charles	21000	Research	33	Single
Johns	23000	Research	25	Single

**MINISTRY OF EDUCATION (KNEC COMPLIANT)**

2.

Thomas	25000	Computer	26	Married
Ann	27000	Finance	28	Married
Susan	29000	Finance	29	Divorced
Tina	31000	Research	24	Divorced
Andrew	33000	Computer	40	Single
Hardy	35000	Finance	20	Married
Njeri	37000	Finance	43	Single
Kimani	10000	Research	15	Single
Silamtoi	15000	Finance	35	Divorced
Tina	35000	Computer	25	Married
Moses	59000	Research	33	Single
Miriam	70000	Finance	56	Divorced
Maurice	32876	Computer	70	Divorced
Alphie	43876	Research	98	Divorced
Albert	48098	Research.	32	Single
Langat	6500	Computer	12	Single
Phenny	29000	Finance	70	Single
Hilda	32000	Computer	13	Married

**MINISTRY OF EDUCATION (KNEC COMPLIANT)**

Create data base called personnel and create a table named department (5 mks)

**MINISTRY OF EDUCATION (KNEC COMPLIANT)**

- (b) Create queries to determine (save each query using the alphabet numbers below)
- i. Number of people with basic salary greater than 32,000= (5 mks)
  - ii. Number of people with basic salary less than 45,000= AND come from computer department(5mks)
  - iii. Names of people who are either married or single. (4 mks)
  - iv. Those whose salary fall between 25,000/= and 50,000= (3mks)
  - v. Those whose name begin with letter M or end in letter S (3 mks)
- (c) (i) Create a query to compute the new salary if there is an increment of basic pay by 50% (7mks)
- (ii) Filter using query those who earn above 33000/= and aged between 39 and 70 (5 mks)
- (d) (i)
- Create a form using form wizard using the Departmental table above. (3mks)
- (ii) Create a form in design view using the departmental table above on the form calculate the total basic salary for the whole table, add current date and time on the form header (5 mks)
- (iii) Create a report for THE ABOVE table using design view and print. (5mks)