

KCSE 2026 FINAL PREDICTION

COMPUTER STUDIES

(PREDICTIONS TRIALS 1-10)

THE ULTIMATE FINAL BLUEPRINT FOR KCSE 2026 SUCCESS!

Give your candidates the ultimate competitive edge with this masterfully engineered prediction series. Meticulously designed to replicate the exact format and content of the final KNEC papers, this comprehensive toolkit delivers high-yield, exam-focused practice. It is the definitive revision resource to sharpen understanding, skyrocket self-esteem, and guarantee top-tier grades!

The following are Questions to expect in KCSE 2026.

CONFIDENTIAL!

For Marking Schemes

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KCSE 2026 FINAL BLUEPRINT!

KCSE 2026 FINAL PREDICTIONS

CONFIDENTIAL EXAM 1

451/1

COMPUTER STUDIES

PAPER 1**TIME: 2½ HOURS**

NAME.....

SCHOOL..... SIGN.....

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

*Kenya Certificate of Secondary Education.***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.

For Examiners Use Only

Section	Questions	Candidates Score
A	1-15	
B	16	
	17	
	18	
	19	
	20	
	TOTAL SCORE	

SECTION A (40 MARKS)**Answer ALL the questions in SECTION**

1. List any THREE examples of Database packages popularly in use today. **(3 marks)**
2. List any TWO functions of the Control Unit **(2 marks)**
3. Mobile devices such as Smartphones and Tablets use an operating system.
List any THREE types of operating system found in mobile devices. **(3 marks)**
4. A group of students are producing a class newsletter which they will email to parents of students in the class. The students have decided to use a smartphone. Data for the newsletter will be input, stored and output by the smartphone.
Identify any TWO devices that are part of the smartphone that could be used to input the data for the newsletter. **(2marks)**
5. Many books contain a *gutter margin*. Explain gutter margin as used in word processing **(2marks)**
6. a) Distinguish between General Purpose computers and Special Purpose Computers **(2 marks)**
b) Define toggle keys found on a standard keyboard, giving any TWO examples **(2 marks)**
7. Ujuzi High School is about to set up a computer Laboratory. Advise them on three measures to take in order to ensure proper ventilation in the Room. **(3 marks)**
8. a) Define Virtual Memory.
b) Name any ONE place where virtual memory may be found in a computer. **(2 marks)**
9. List any THREE differences between *Cathode Ray Tube* Monitors and *Flat Panel* Monitors **(3 marks)**
10. a). One of the factors to consider when purchasing computer hardware is warranty. List any TWO contents of a warranty. **(2 marks)**
b). Distinguish between portability and compatibility as used in computer hardware. **(2 marks)**
11. A computer studies student is creating a movie, in school, for a project. He needs to take the movie home to edit it. The student decided to use solid-state memory card (SSD card) to transport the movie files. The student is unable to save the work on the memory card.
Give any TWO error messages that may appear when attempting to save the work. **(2marks)**
12. Mention any TWO advantages of serial cables **over** parallel cables for data transmission. **(2 marks)**
13. List any TWO ways that *text* can be made to fit in a text box in desktop publishing software **(2marks)**

14. List any TWO application areas of artificial intelligence (2 marks)

15. a). State any TWO functions of system software (2marks)

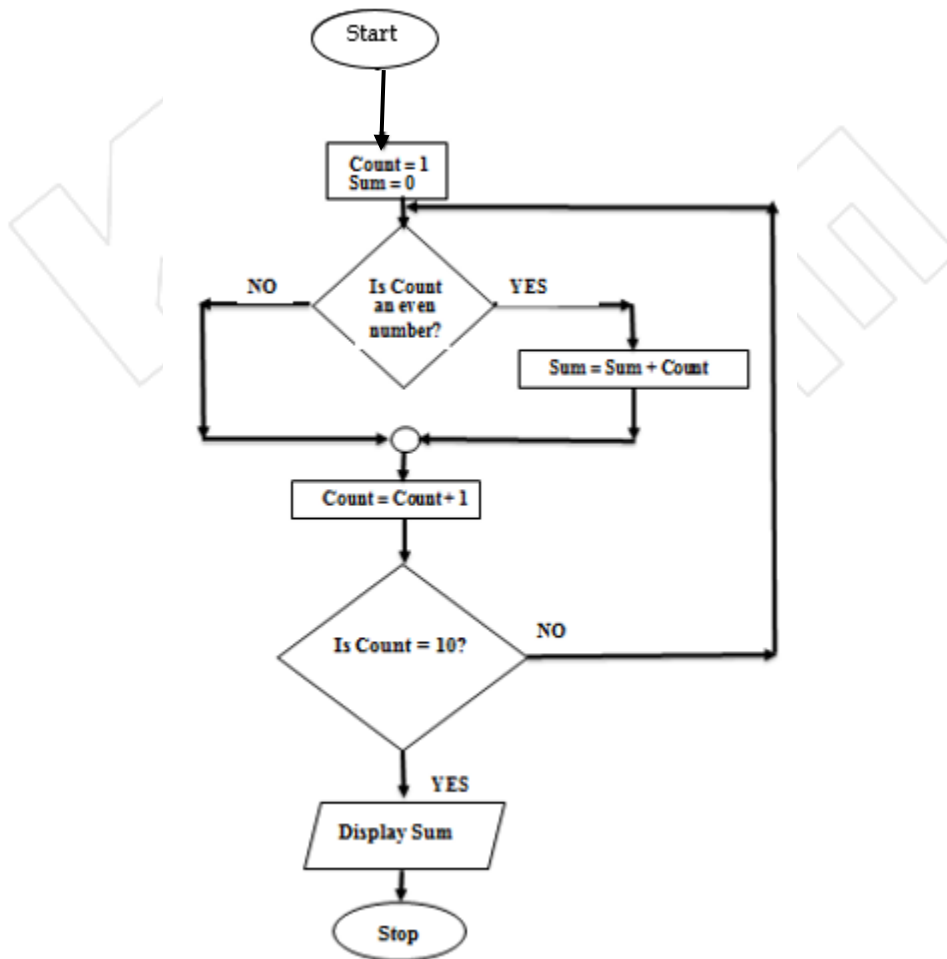
b). Differentiate between freeware and shareware with reference to software. (2marks)

SECTION B (60 Marks)

Answer question 16 and any other **three** questions in this section in the spaces provided

16. a) State any TWO differences between *syntax error* and *logical error* as used in programming. (4 marks)

b) The Figure below shows flowchart used to find the sum of even numbers in the first 10 natural numbers. Study it and use it to answer questions that follow.



Determine the output from the flowchart. *Show your working.* (4 marks)

i) Write a pseudo code for the flowchart above. (7 marks)

17. a) List any TWO reasons why binary systems are used in computers. (2 marks)

b) i) Convert 93CADF_{16} to its binary equivalent (2 marks)

ii) Use the two's complement to solve: $-37_{10} + 51_{10}$ (4 marks)

iii) Convert 10111111.01111_2 to its Octal equivalent (2 marks)

- c) Give any TWO characteristics of a good system analyst. **(2 marks)**
- d). Describe the THREE components of an expert system **(3 marks)**
- 18.** Lawino opened her flash disk in one of the school's computers using drive F. she had saved her work in a folder named "MINE". This folder has subfolders for PICTURES, PERSONAL and AUDIO. In PERSONAL subfolder, there are files such as MyDocs.xlt and FamilyDocs.pff, while in PICTURES there are subfolders such as OFFICE and CHURCH.
- a) i) Draw a directory tree structure for Lawino. **(2 marks)**
- ii) In CHURCH subfolder there is a file named OldPicture.jpg. Write a path to this file. **(2 marks)**
- ii) She opened the file OldPicture.jpg, then decided to delete it. Explain what would happen. **(2 marks)**
- b) i) One classification of operating systems according to user-interface is menu driven. Explain menu driven. **(2 marks)**
- ii) Describe, with the help of an example, transcription errors. **(3 marks)**
- c) In the academic office of our school, there is a master file and a reference file.
- i) Distinguish between a master file and a reference file. **(2 marks)**
- ii) For each of the files above (i), name any TWO pieces of information that can be held in each of them in relation to school. **(2 marks).**
- 19.** (a)(i) The formula B2+\$C\$2 was entered in cell D2 then copied to cell F2. Show the new formula in cell F2 and give a reason for your answer.. **(2 marks)**
- (ii) State the meaning of each of the following terms as used in spreadsheets:
- (A) Countif () **(2 marks)**
- (B) Max () **(2 marks)**
- (b)(i) Explain two types of *documentation* produced when developing a system by a system analyst. **(2 marks)**
- (c) Nosim has developed a computerized system for a school and currently in its change over stage, where the new system is introduced in a department then tested to ascertain its effectiveness and once its performance is satisfactory it is implemented in the entire organization.
- (i) Identify the changeover strategy used. **(1 mark)**
- (ii) Explain any TWO advantages of the changeover strategy identified in (i) above. **(4 marks)**
- 20.** Arosy bought a smartphone. Smartphones can be connected using wired or wireless methods.

a) i) Give two disadvantages, to Arosy, of using *a wired* method to connect to the smartphone.

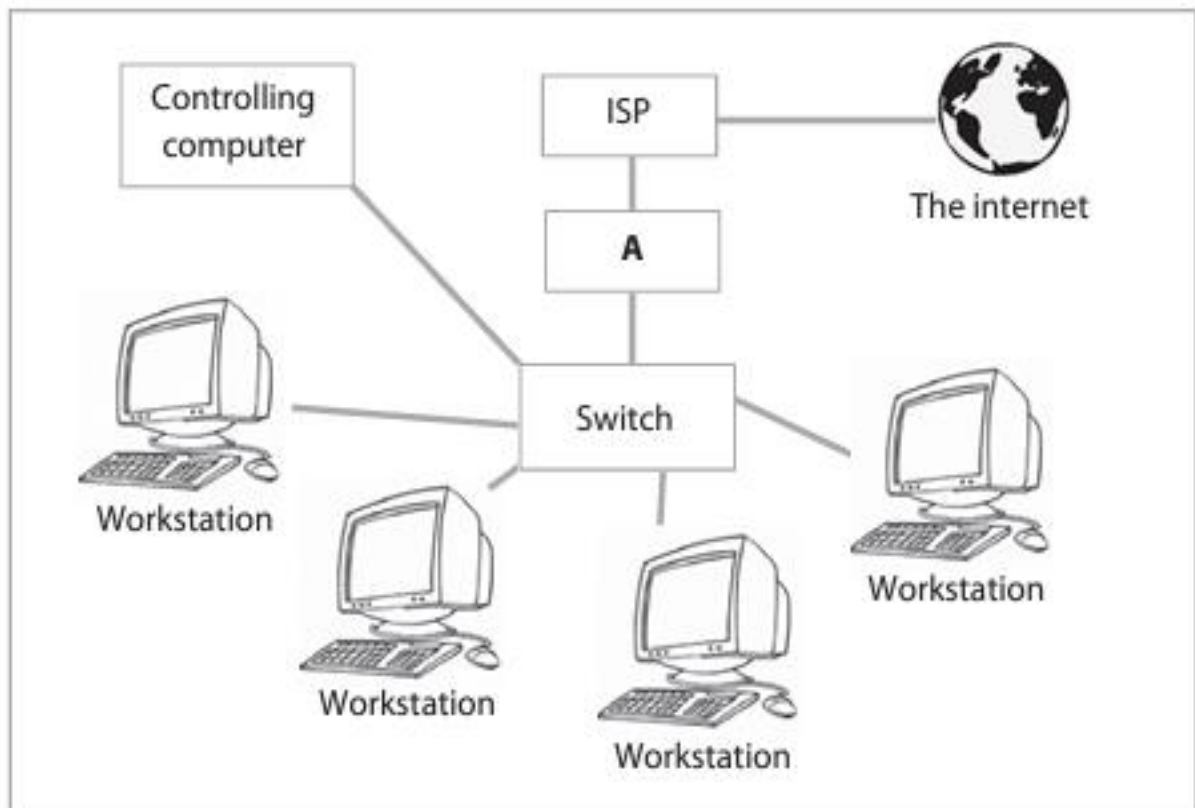
(2marks)

ii) Give two disadvantages to Arosy of using *a wireless* method to connect to the smartphone.

(2marks)

b) The diagram shows how a network is connected to the internet.

i) Identify the hardware device labelled A on the diagram.



Device A

(1 mark)

ii) Identify any TWO types of connections that can be used to connect the company network to the internet.

(2marks)

c) i) What is an ISP?

(2 Marks)

ii) Give four examples of ISPs.

(2 Marks)

d) Security solutions prevent read and write access to data, which provides very strong protection against tampering and unauthorized access.

Explain the following terminology as used in data security

(4 Marks)

i) Cypher text

ii). Piracy

KCSE 2026 FINAL PREDICTIONS**CONFIDENTIAL EXAM 1**

451/2

COMPUTER STUDIES**PAPER 2****TIME: 2½ HOURS**

NAME.....

SCHOOL..... SIGN.....

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

*Kenya Certificate of Secondary Education.***INSTRUCTIONS TO CANDIDATES**

- a) Indicate your name and index number at the top right hand corner of each printout
- b) Write your name and index number on the CD/Removable storage media provided
- c) Write the name and version of software used for each question attempted in the answer sheet provided
- d) Answer all questions
- e) All questions carry equal marks
- f) Passwords should not be used while saving in the CD/Removable storage medium
- g) All answers must be saved in the CD/Removable storage medium
- h) Make printout of the answers on the answer sheet
- i) Arrange your printout and ties/staple them together
- j) Hand in all printouts and the CD/Removable storage medium used
- k) This paper consists of five printed pages
- l) Candidates should check the question paper to ascertain all the pages are printed as indicated and that no question is missing
- m) Candidates should answer the questions in English
- n) ALL Data for currency data type should be formatted to Kenya Shillings
- o) All the system Date and Time should be set to correct Kenya time and Date settings

1. a) Kibos holding 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	<u>KIBOS HOLDINGS COMPANY LIMITED</u>						
2	<u>P.O BOX 23625 BOMET</u>						
3		First quarter			Second quarter		
4		January	February	March	April	May	June
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 Kibos holding 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)**
- 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. **(10marks)**
- vi)Print Expenses 1 and Expenses 2. **(2marks)**

- 2 a)A **hospital** uses a database to maintain data about its employees. Create a database file named **EMPLOYEE**. **(1mark)**

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. **(14marks)**

- EMP NO
- NAME
- DATE OF BIRTH
- DEPARTMENT
- BASIC PAY

Fig 1

Emp	Name	Date of birth	Department	Gross pay
01	John Kirui	16/2/1972	Computer	28000
02	Margaret Wairimu	2/2/1960	Medical	30000
03	Jane Cherono	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. **(4marks)**

ii) Data for included fields is as follows;

Profession

Mohammed, Wanyama and Wairimu are Doctors. Oduor and Omondi are accountants. Kiprono is an 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.

(6marks)

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)**

KCSE 2026 FINAL PREDICTIONS

CONFIDENTIAL EXAM 2

451/1

COMPUTER STUDIES

PAPER 1

TIME: 2½ HOURS

NAME.....

SCHOOL..... SIGN.....

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

Kenya Certificate of Secondary Education.

INSTRUCTIONS TO CANDIDATES

- (a) Write your name and index number in the spaces provided above.
 (b) This Paper consists of **two** sections **A** and **B**.
 (c) Answer **all** the questions in **section A**.
 (d) Answer **question 16** (compulsory) and any other **three** questions from section **B**.

FOR EXAMINERS USE ONLY

SECTION	QUESTION	
A	1 – 15	
B	16	
	17	
	18	
	19	
	20	
TOTAL MARKS		

SECTION A (40 MARKS)

Attempt ALL questions from this section

1. What is meant by Data Communication Equipment (DCE)? (1 mark)
2. List **three** examples of Data Communication Equipment. (3 marks)
3. (i) Name **three** types of graphics used in a word processor (3 marks)
(ii) Distinguish between subscript and section breaks (2 marks)
4. List any **three** protocols used in sending and receiving of emails (3 Marks)
5. State the use of each of the following flowchart symbols (3 marks)
 - i. 
 - ii. 
 - iii. 
6. State **any two** techniques used by a network administrator to detect and prevent computer crimes. (2 marks)
7. State **two** transmission media used in wireless transmission (2 marks)
8. With the aid of a diagram describe the Hierarchical Database Model (2 marks)
9. List any **three** factors that should be considered when developing a database application and give reasons why each should be considered. (3 marks)
10. Name any **three** types of validation checks during data entry (3 marks)
11. (i) Differentiate between primary key and index key as used in databases. (2 marks)
(ii) Differentiate between hardware and software portability. (2 marks)
12. State **three** ways in which computer virus infection can be prevented other than through restricting the usage of removable storage media. (3 marks)
13. State **two** advantages of **real time** data processing mode. (2 marks)
14. State **two** roles of an information system (2 marks)
15. A company in town wishes to link its offices together; the linking may be through wireless or fibre optic network media. State **two** benefits that the company would gain from the use of metropolitan area network (MAN) (2 marks)

SECTION B (60 MARKS)

Answer question 16 and any other THREE questions from this section B

16. (a) State **four** guidelines followed when designing a flowchart. (2 marks)
- (b) A concert was organized in a hall with a capacity of 1500 people. The first 700 people to buy the tickets at ksh. 1500 were reserved a seat at the VIP section while the others who bought their tickets at ksh. 1000 sat at normal hall outside the VIP section. Assuming that only 1420 tickets were sold;

- (i) Write a program pseudo code that would be used to determine the sitting arrangements of ticket holders i.e VIP or Normal, the number of VIP, Normal and Unoccupied seats and finally display the total amount of money collected from the concert. **(6 marks)**
- (ii) Draw a flowchart for the pseudocode above **(7 marks)**

17. (a) Differentiate between a **select** query and **action query** as used in databases. **(2 marks)**

(b) Explain **four** elements of database **(4 marks)**

(c) Explain the use of each of the following field properties as used in databases **(3 marks)**

(i) Validation rule

(ii) Input mask

(iii) Indexed

(d) Kiprono has been experiencing a lot of problems in his computer while using it. As a result, he was advised to do the following in order to avoid the problems.

(i) Compress the disk files

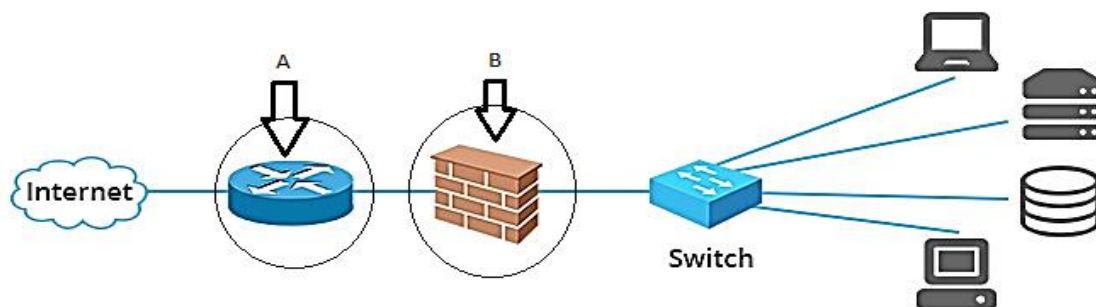
(ii) Defragment the disk.

Explain the difference between the two terms above **(2 marks)**

(e) Differentiate between Multi-user operating system and Multithreading operating system. **(2 marks)**

(f) State **two** roles of a programmer in system development life cycle **(2 marks)**

18. (a) The diagram below shows a network arrangement that includes a network security feature to protect data and information. Use it to answers the questions that follow.



(i) The networking device labeled **A** is used to connect computers to a WAN (Internet). Name the device used for this purpose. **(1 mark)**

(ii) The part labeled **B** is a security feature used to protect data traffic in the network. Identify and explain the function of this part. **(2 marks)**

(b) Define a network node. **(1 mark)**

(c) State any **two** functions of a network operating system. **(2 marks)**

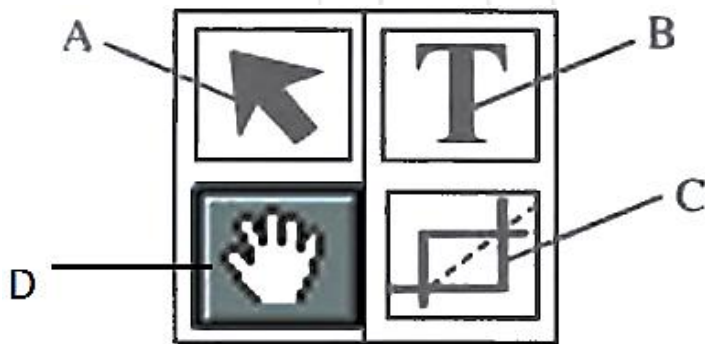
(d) The internet has been embraced as great a great resource for information and a variety of applications. State **two** ways in which a book publisher can make use of the internet. **(2 marks)**

(e) Name and explain **two** types of twisted pair cable used in data transmission. **(3 marks)**

(f) With aid of a labeled diagram, describe ring network topology; stating **one** disadvantage of such network. **(4 marks)**

- 19.** (a) Convert each of the following numbers to decimal equivalent; given that the left most bit is a sign bit.
- (i) 0101011 (2 marks)
- (ii) 111110101 (2 marks)
- (b) Differentiate between **enhanced BCD** and **ASCII-8** coding scheme of representing data in computers. (2 marks)
- (c) Compute the following binary arithmetic expressions.
- (i) $1010.101 + 11.011$ (2 marks)
- (ii) $1010.101 - 11.011$ (2 marks)
- (d) Convert 0.42_{10} to 6-bit binary notation. (2 marks)
- (e) Using 8-bit twos complementation, perform the following binary operation. (3 marks)
- $111010_2 - 27_{10}$

- 20.** The figure below is a toolbar for a **DTP** package.



- (a) Name and state the functions of the tools labeled A, B, C and D. (4marks)
- (b) Using relevant examples give **four** advantages of using desktop publishing software. (4 marks)
- (c) State **four** advantages of automated production. 4 marks)
- (d) Most industries use computers for process control. Give any **three** benefits of this.(3mks)

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KCSE 2026 FINAL PREDICTIONS**CONFIDENTIAL EXAM 2**

451/2

COMPUTER STUDIES**PAPER 2****TIME: 2½ HOURS**

NAME.....

SCHOOL..... SIGN.....

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

*Kenya Certificate of Secondary Education.***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.

1. (a) (i) Using a database management system, create a database file named
ANTIGUA_ENT_LTD to store the data below.

(1 mark)

CommodityTable

Commodity_ID	Commodity_Name	Retail_Cost
C10	Apple Vinegar Super	400
C20	Assorted Sandwich	300
C30	Sweetener Max	130
C40	Soda 1L	120
C50	UPS APC 2	5000
C60	Persil Detergent	130
C70	Minute maid	120
C80	Pizza XL	1000
C90	Sacho Springs water 5L	650
C100	UPS APC 1	3000

SuppliersTable

Supplier_ID	Supplier_Name	Town
S-11	Antigua Foods	Nakuru
S-12	Prime Fast Food	Nairobi
S-13	Gilanis Mart	Nakuru
S-14	Power Dynamics Ltd	Eldoret
S-15	Panda Energy	Nakuru
S-16	SAHICO	Kabarnet
S-17	Rio Beverages	Nakuru

OrderTable

Order_ID	Commodity_ID	Supplier_ID	Order_Date
101	C10	S-11	12/04/19
102	C20	S-12	22/04/19

103	C30	S-11	12/04/19
104	C40	S-11	02/05/19
105	C50	S-14	12/04/19
106	C60	S-16	22/08/18
107	C70	S-17	19/08/18
108	C80	S-12	12/04/18
109	C90	S-13	11/05/18
110	C100	S-15	15/04/18

- (ii) Create tables named: **Commodity_Table**, **Suppliers_Table** and **Order_Table** in the database created in (a) to store the information above assigning appropriate data types for each field.

(14 marks)

- (iii) Identify a field to be assigned as primary key for each table. ($1\frac{1}{2}$ marks)

- (iv) Create relationships among the tables and enforce referential integrity. **(3 marks)**

- (b)** Capture the number of units for the Commodities as shown below in the Commodity Table.

(3 marks)

Commodity_ID	No Of Units
C30	50
C10	20
C60	89
C40	18
C50	10
C20	16
C70	35
C80	5
C90	21
C100	17

- (c) Create a query named **RETAILCOST** to display Commodity name, retail price, number of units, suppliers' name and calculate the total retail price for each Commodity. **(4 marks)**
- (d) Create a query named **CUSTOM_QR** to display name of each Commodity, retail price and number of units ordered. The query should contain Commodities whose suppliers name start with letter "P" and Total Retail Price is between Ksh.4000 and less than Ksh.50,000. **(5 marks)**
- (e) Create a report named **SUPPLIERS_RPT** to display Commodity name, suppliers' name, total retail price and date of order. **(4 marks)**
- *Group records per suppliers' town*
 - *Title the report as "ANTIGUA SUPPLIERS DETAILS"*
 - *Show the Total Retail Prices per supplier.*
- (f) Create a report named **ORDERS_2019** to display Commodity name, retail price, suppliers' name, town and items ordered in the year 2018 only. Show the number of suppliers. **(3½ marks)**
- (g) Create a pie chart to display Total Retail Prices and their respective Commodities. **(2 mks)**
- (h) Create a form named **COMMODITIES_2018** used to enter data in the database to appear as shown below **(5 marks)**

ANTIGUA LTD			
CommodityName		RetailPrice	
No. of Units		SuppliersName	
Town		OrderDate	

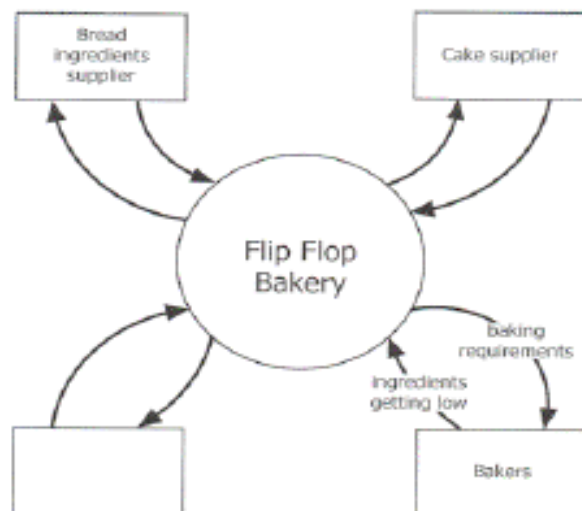
- (i) Print the following **(4 marks)**
- **Tables:** CommodityTable
 - **Queries:** RETAIL_COST and CUSTOM_QR
 - **Reports:** SUPPLIERS_RPT

Question 2

- a) Launch a Desktop publishing software and set the measurements to centimeters, margins 2cm all round and paper size A4 potrait. **(1½ marks)**

Data flow diagram (DFD)

A **data flow diagram (DFD)** is a design tool to represent the flow of data through an information system. A "context level" DFD can be used to show the interaction between a system and outside entities; it can also show the internal data flows within a system. This version is also called a context diagram. It often shows the information system as a single circular shape with no details of its inner workings: what it shows is its relationships with the *external entities*.



1/none data flow diagram (DFD)

For a diagram to be called a DFD, it needs to show the inner workings of an information system. The different levels of a DFD indicate how detailed it is, e.g. a Level 0 DFD is a broad overview of a system, showing hardly any detail within the system. A level 2 DFD explodes more summarised processes and shows another level of complexity within them. A level 3 or 4 DFD shows even more components opened up to show their inner details. With a

dataflow diagram, developers can map how a system will operate, what the system will accomplish and how the system will be implemented. It's important to have a clear idea of where and how data is processed in a system to avoid double-handling and bottlenecks. A DFD also helps management organise and prioritise data handling procedures and staffing requirements.

DATAFLOWDIAGRAM

b) Design the publication above (in page 4) as it appears and save it as MOKASA_2.(30 marks)

c) Format the Title “ Data Flow Diagram (DFD)” as follows: (6 marks)

(i)

- **Character spacing:** 300%
- **Font style:** Times New Roman
- **Font size:** 13.5

(ii) Modify the shape containing the title as follows:

- **Background :** Gradient with 17% transparency, Shading style Horizontal
- **Border line :** Double

d) Apply a first line indent to the first paragraph of the document. (2 marks)

e) Proofread your publication. (½ mark)

f) Insert your full index number as a watermark of your publication. (2 marks)

g) Insert your full name as the header, Class and admission number as the footer of your publication . (2 marks)

h) Insert page number at the right bottom margin of your page. (2 marks)

i) Insert the Date and time created for this document after the first paragraph. (2 marks)

j) Print your publication (2 marks)

KCSE 2026 FINAL PREDICTIONS**CONFIDENTIAL EXAM 3**

451/1

COMPUTER STUDIES**PAPER 1****TIME: 2½ HOURS**

NAME.....

SCHOOL..... SIGN.....

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

*Kenya Certificate of Secondary Education.***Instructions to Candidates**

1. This paper consists of TWO sections; A and B
2. Answer all questions in sections A.
3. Answer question 16 and any other THREE questions from section B.

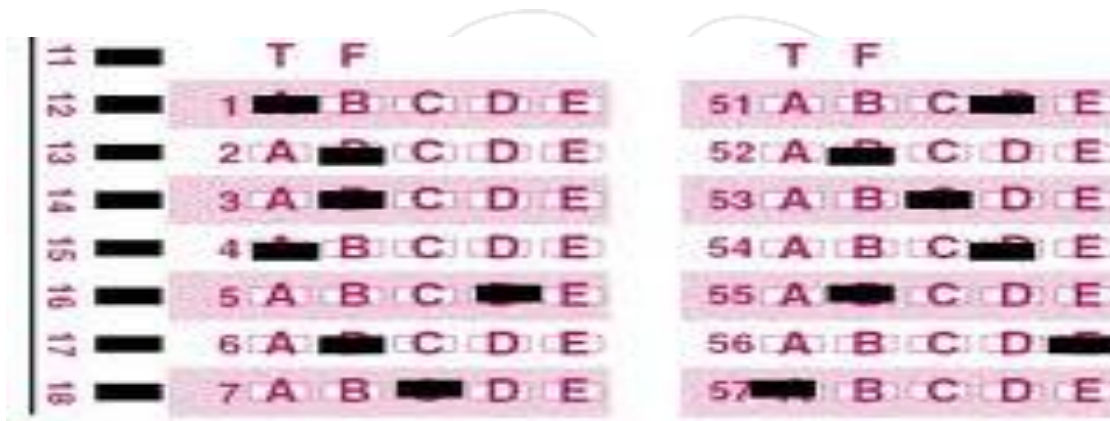
FOR EXAMINERS USE ONLY

SECTION	QUESTION	
A	1 – 15	
B	16	
	17	
	18	
	19	
	20	
TOTAL MARKS		

SECTION A (40 MARKS)*For Marking Schemes Contact 0746-222-000 / 0753-222-000*

Answer All Questions In This Section

1. Differentiate between cold booting and warm booting in computing (2mks)
2. Define parallel processing (1mk)
3. (a) Mention any **TWO** reasons why command-based operating systems are not common in today's business computer systems. (2mks)
(b) Explain any **THREE** functions of an operating system with respect to memory management (3mks)
4. Differentiate between partitioning and formatting as used in disk management (2mks)
5. Name the type of scanner used to capture data from the following document format below (1mk)



Computer output can now be in form of spoken words in digitized speech. An example of such application is spell learning devices for children. State ONE advantage of speech output. (1mk)

6. Mention any **TWO** features that are considered before buying a main memory module. (2mks)
7. A technician recommended a computer in the principal's office needs upgrading of the CPU. State any **TWO** reasons that may have necessitated the upgrading of the CPU. (2mks)
8. State **TWO** reasons why secondary storage is preferred to main memory in data storage. (2m)
9. (a) State **ONE** advantage of relational database model over flat files (1mk)
(b) State **TWO** uses of primary keys in a database (2mks)
(c) A database requires data to be defined by assigning data types to fields for purposes of consistent storage. Describe any **FOUR** data types that can be allowed in Ms Access. (4mks)
(d) Define the term macro as used in databases (1mk)
10. State any **ONE** reason why USB interface cables are widely used in computing device (1mk)
11. A company is considering replacing some of its software, including its word processing package, and to acquire an integrated software package. State **TWO** advantages for the company in using in tegrated software rather than separate packages. (2mks)
12. (a) State **TWO** types of DTP software (2mks)

(b) List **FOUR** page formatting features in DTP (2mks)

13.(a) Explain the meaning of “what if analysis” in spread sheets (2mks)

(b) The table below shows items consumed by some students for breakfast in a given day.

	A	B	C	D	E	F
1			ITEM COST			
2	NAME		SAUSAGE	TEA	BANANA	TOTAL COST
3			15.00	10.00	5.00	
4	Charles		1	1	2	35
5	Amoit		2	4	2	80
6	David		3	1	2	
7	Okello		2	1	2	50

(i) Using an expression, find the total expenditure incurred by David (2mks)

(ii) State what you would obtain from the expression = Count IF (F4:F7, “>45”)(1mk)

14. Define the following terms as used in relation to operating systems (2mks)

(i) Folder

(ii) Drive

SECTION B (60 MARKS)

Answer Question 16 And Any Other Three Questions From This Section

15. (a) State any **THREE** advantages of using Object Oriented programming for writing programs (3mks)

(b) In a computer contest with 40 entries, three papers are tested and the final marks awarded according to the average of the papers. The final marks are then ranked to get position 1, 2 and 3 who are awarded trophy, cash and scholarship, trophy and cash, and cash respectively

Write a program pseudocode and flowchart that will prompt for the name, school and marks for each paper then compute the final marks and rank and display the students name, school, final marks position and award.

i. Pseudocode (5mks)

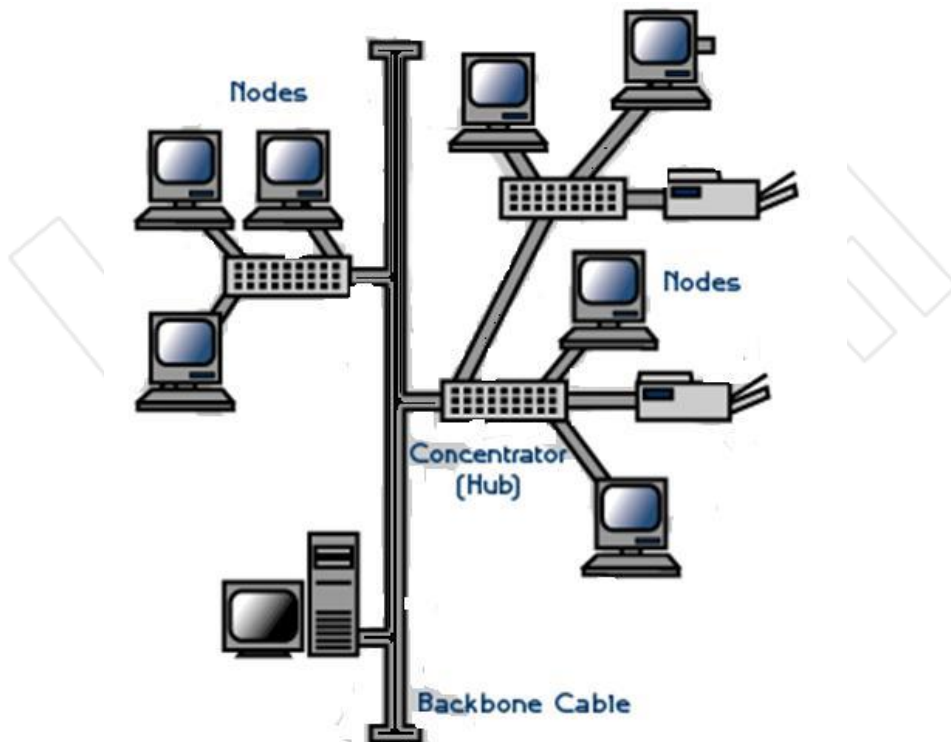
ii. Flowchart (7mks)

16. (a) With the aid of a well labeled diagram, describe control and feedback model in a system (4mks)

17. between the following terms as used in system development (4mks)

- i. Hard system and soft system
- ii. Operational feasibility and technical feasibility
- (c) State **THREE** ways in which organizations manage system entropy (3mks)
- (d) Explain any **TWO** reasons for system maintenance (1mk)
- (e) Briefly explain **THREE** ways in which computers can be used in motor vehicle manufacturing companies (3mks)

- 18.(a) Distinguish between the following terms as used in data communication (4mks)
- i. Guided transmission and unguided transmission
 - ii. Multiplexing and demultiplexing
- (b) Below is a diagram of a network topology.



- i. Name the above topology (1mk)
 - ii. State **ONE** advantages and **ONE** disadvantage of using the topology named above (2mks)
- (c) (i) State **TWO** ways in which users in an organization can be a security threat to data in an information system. (2mks)
- (ii) Define cyber terrorism (1mk)
- (d) A school intends to set-up an e-mail. List **FOUR** activities likely to be provided by the e-mail facility. (2mks)
- (e) Define the following terms as used in the internet. (2mks)
- (i) Internet blog
 - (ii) Webportals

(f) Kenya publishing and printing company wishes to employ an ICT professional to assist in making publications .State the suitable ICT professional the firm could employ (1mk)

19. (a) (i)List and explain the THREE types of errors that can occur during data collection stage of data processing **cycle** (3mks)
(ii)Distinguish between master file and transaction (2mks)
(iii) Define real time processing (1mk)
(iv) Explain a situation where the batch processing would be **appropriate** (1mk)
- (b) Using twos complement, perform the following operation and give your answer in decimal notation
- $777_8 - 25_{10}$ (4mks)
- (c) Solve $AC_{16} + 101_2 = X_2$ (2mks)
(d) Convert binary number 11010110.1001_2 into octal number. (2mks)
20. (a) State any TWO negative effects of introducing robots in a manufacturing plant (2mks)
(b) State THREE advantages of using computers (3mks)
(c) Name THREE types of special purpose memories used in a computer (3mks)
(d)Explain the purpose of the system clock (2mks)
(e) (i) In word processing, differentiate between text wrap and word wrap (2mks)
(ii) List any THREE types of section breaks used in word. (3mks)

KCSE 2026 FINAL PREDICTIONS

CONFIDENTIAL EXAM 3

451/2

COMPUTER STUDIES

PAPER 2

TIME: 2½ HOURS

NAME.....

SCHOOL..... SIGN.....

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

Kenya Certificate of Secondary Education.

Instructions to candidates.

- a) Indicate your name and index number at the top right hand corner of each printout.
- b) Write your name and index number on the CD provided.
- c) Write the name and version of the software used for each question attempted.
- d) Answer **all** questions.
- e) All questions carry equal marks.
- f) Passwords should not be used while saving.
- g) Make a print out of the answers on the answer sheet.
- h) Hand in all the print out and the CD.

1. The table below shows the admission numbers and names of five students and their scores in six subjects in a mock examination.

ADM. NO.	Name	English	Maths	Biology	Chemistry	Physics	History
2020	Victor Mutiso	77	68	75	35	58	80
2032	Zablon Onyango	44	77	80	42	60	73
2037	Pauline Nafula	68	59	91	39	59	75
2040	Naom Cherop	55	80	89	48	38	66
2044	Jameleck Kioko	69	62	83	43	44	70

- a) Enter the above data into a worksheet and save the file as ‘mock results’ **(13mks)**
- b) Using a formula, calculate the; **(4mks)**
- Total score for each students
 - Mean score for each student
- c) Use a function to obtain the mean for each subject **(3mks)**
- d) A student is awarded a ‘pass’ if their mean score is 60% or more. Use a function to determine the number of students who are awarded ‘pass’ **(2mks)**
- e) Format the worksheet as follows
- Borders : single line
 - Subject heading : align 90°
 - Marge the cells above all the subjects headings so that the text ‘SUBJECT’ is above them.
 - Mean score : One decimal place **(4mks)**
- f) Copy the contents of the worksheet to a blank worksheet and insert a blank column after every subject.
- Label the new columns as Eng B, math B, Bio B, Chem B, Phy B, and Hist B respectively.
- On the inserted columns, compute the grades using IF function based on the following criteria **(10mks)**

Mean score	Grade
score ≥ 75	A
$60 \leq \text{score} < 75$	B
$50 \leq \text{score} < 60$	C
$45 \leq \text{score} < 50$	D
Score < 45	E

g) Hide all the columns containing score values and save the worksheet as “Mock results 2” (2mks)

i) Create a bar chart to compare students mean score and label the chart accordingly. (10mks)

j) Print the two worksheets and the bar chart (4mks)

2. The data in the table was extracted from a survey data on employment.

Table 1: EMPLOYEE TABLE

Name	Year of birth	Employee ID NO.	Employer ID	Job category
DAISY	1980	13144	01	GK4
DAVID	1970	11100	04	GK3
DOREEN	1984	14010	02	GK1
DAVIN	1976	12110	05	GK1
ALLAN	1973	11410	03	GK2
KATE	1968	10570	04	GK3
ZEDDY	1990	11040	05	GK3
PIUS	1998	15978	03	GK2
ZION	1992	17192	02	GK4
BOB	1993	18965	05	GK4

Table 2: EMPLOYMENT TYPE

Job Category	Job Description
GK1	Casual

GK2	Temporary
GK3	Contract
GK4	Permanent

Table 3: EMPLOYER TABLE

EMPLOYER ID	EMPLOYER NAME
01	ONYANGO
02	WAMBUA
03	OSHIRO
04	KATANA
05	AWINJA

- a) i) Create a database named “STAFF” to store the above **(14mks)**
ii) Create relationships between the tables **(4 ½ mks)**
iii) Use forms to enter data into the tables **(10 ½ mks)**
- b) i) Generate a report to display the name year of birth, age and employer’s name for the employees who will be over 30years old by the year 2015 **(10mks)**
ii) Compute the mean age of employees on the report you created in b(i) above. **(2mks)**
- c) i) Create a query to display the employees and their job description. Save the query as “STAFF TYPE” **(3mks)**
ii) Create a pie chart based on the query in c(i) above to display the proportion of employees in various job description.
Save the report as CHART
- d) Print i) Three tables
 ii) Two reports
 iii) Output of query results for STAFF TYPE.

KCSE 2026 FINAL PREDICTIONS

CONFIDENTIAL EXAM 4

451/1

COMPUTER STUDIES

PAPER 1**TIME: 2½ HOURS**

NAME.....

SCHOOL..... SIGN.....

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

*Kenya Certificate of Secondary Education.***INSTRUCTIONS TO CANDIDATES**

- Write your **Name**, **Class**, **Admission Number** and **Index Number** in the spaces provided.
- Answer **ALL** the questions in **section A**
- Answer **question 16 (Compulsory)** and **any other three** questions from **section B**.

For Official Use Only

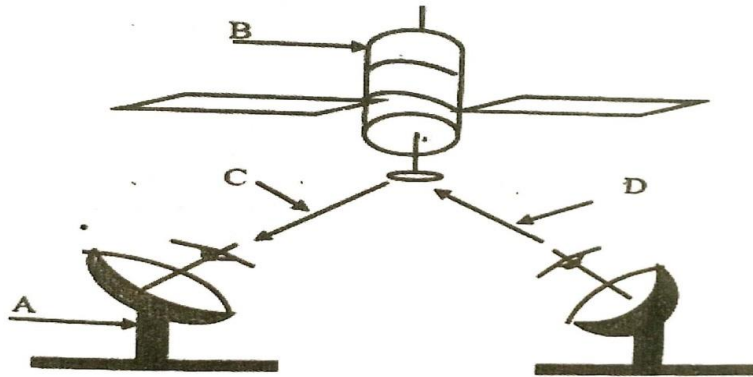
Question	Maximum score	Actual score
1-16		
17		
18		
19		
20		
TOTAL SCORE		

SECTION A: (40 MARKS)**Answer ALL Questions in This Section**

1. During a visit to the typing room, Jane a computer student observed a type of printer that uses a beam to create an image on a rotating drum. As the beam hits the drum, some regions attract ink toner particles. The toner is then fused onto a piece of paper.
- I. State the name of this type of printer and indicate whether it is an impact or non-impact printer. **(1mark)**
- II. List **two** advantages of using the printer mentioned in a. above. **(2marks)**
2. Bunam Water Company sends out field officers to take consumer meter readings. The data collected by the officers is then keyed into the computer. The system then generates utility bills which are printed and sent to the consumers.
- i. State **two** transcription errors that are likely to occur during meter reading or input. **(1 mark)**
- ii. State **two** ways such errors can be avoided. **(1 mark)**
3. Highlight the dangers associated with the following in a computer laboratory set up:
- a. Purchasing software before assessing requirements. **(1 mark)**
- b. Using foreign flash disks on the computer. **(1 mark)**
4. To process an instruction, the CPU goes through a cycle of three stages. Name each of the stages. **(3 marks)**
5. Explain the importance of the following spreadsheet operations. **(2 marks)**
- (i) Freezing columns
- (ii) Data validation
- (b) Name **two** types of relationships that can be applied in database design. **(1 mark)**
6. Briefly explain any Four block operations that can be performed on data in word processing **(4 marks)**
7. (a) Mutiso wanted to upgrade the RAM of his computer. State two factors Mutiso should consider when purchasing a RAM module. **(1 mark)**
- (b) Define the following terms: **(2 marks)**
- (i) Computer Port
- (ii) Power supply unit

8. Mkulima Bora is a society that embraced E-Commerce recently. The manager is convinced that there is illegal access to the company's system. State TWO ways in which the society can overcome this problem. (2 marks)

9. (a) Study the diagram below and answer the questions that follow.



(i) Name the communication media depicted in the above diagram (1 mark)

(ii) Name the parts labelled A, B, C, and D (3 marks)

10. In a desktop publishing document, an image embedded can be transformed in various ways.

Name any **three** ways one can use to make the image fit in a designated area. (3 marks)

11. Differentiate between source program and object program. (2 marks)

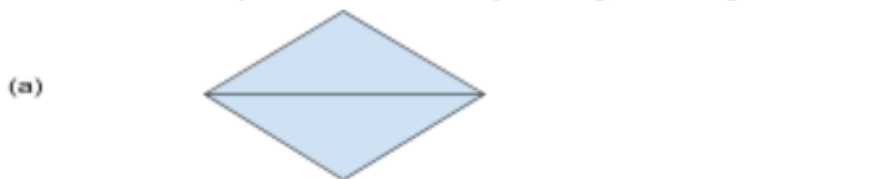
12. Differentiate between the following terms in Internet (4 marks)

(i) Drafts and outbox

(ii) cc and bcc

13. State **two** characteristics of a computer that is infected by computer viruses. (2 marks)

14. Identify each of the following symbols as used in system flowchart. (1 mark)



15. Differentiate between bullets and numbering as used in DTP

(2 marks)

SECTION B (60 marks)

Answer question 16 and any other three questions from this section in the spaces provided.

16. a) State any **three** activities that occur in a program compilation process. (3 marks)

b) A program is needed for calculating the average age of students in a class. Write a pseudocode that will read the age of the students and calculate the average age. The program should terminate if the value of 999 is entered for age and output the number of times the statements within the loop were executed. (10 marks)

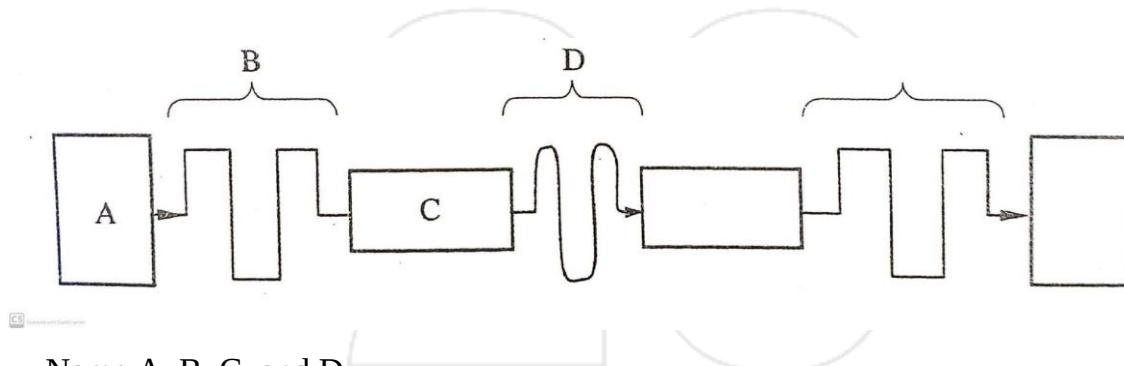
c) Give **two** types of errors that may be detected during program testing. (2 marks)

17. a) State **four** functions which are specific to Network Operating Systems. (4 marks)

b) State **two** advantage of using fibre optic cables over satellite in data communication.

(2 marks)

c) (i) The figure below shows how data is transmitted through a public telephone . (4 marks)



Name A, B, C, and D

d) (i) List any **two** items that may be referred to as data terminal equipments in a network

(2 mks)

(ii) Write the acronym MODEM in full

(1 mark)

(iii) Explain the purpose of a modem when connecting to the internet.

(2 marks)

18. (a) State **three** roles of a programmer in system development life cycle. (3 marks)

(b) State **four** activities that may be carried out when disposing off an old system in an organization

(4 marks)

(c) Distinguish parallel changes over from straight change over as used in system implementation.

(2 marks)

(d) Discuss **any two** fact finding methods. (4 marks)

(e) Differentiate between an open system and a closed system. (2 marks)

19. a) State **three** standard coding scheme used computing and electronic systems. (3 marks)

b) Convert each of the following numbers

i) 1001.001_2 to octal. (2 marks)

ii) 125.5_{10} to hexadecimal. (3 marks)

iii) Add 1100.011_2 to 11001.0101_2 and leave your answer in decimal (3 marks)

c) Using two compliment perform the following arithmetic leaving your answer in binary form. $13_{10} - 15_{10}$ (4 marks)

20. (a) Distinguish between axis labels and data labels as used in spreadsheets. (2 marks)

(b) Name an electronic spreadsheet feature that allows one to perform the following actions.

(4 marks)

Action	Feature
Provide pictorial summary of data	
Make one cell out of many	
List items from Highest to lowest or vice versa	
Make many cells out of one	

(c) Explain the difference between the printing of multiple pages and multiple copies as used in word processing. (2 marks)

(d) Describe the following categories of software (4 marks)

i) Firmware

ii) Proprietary software

(e) Explain the meaning of solid state storage media giving **two** examples of it.

(3 marks)

KCSE 2026 FINAL PREDICTIONS

CONFIDENTIAL EXAM 4

451/2

COMPUTER STUDIES

PAPER 2

TIME: 2½ HOURS

NAME.....

SCHOOL..... SIGN.....

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

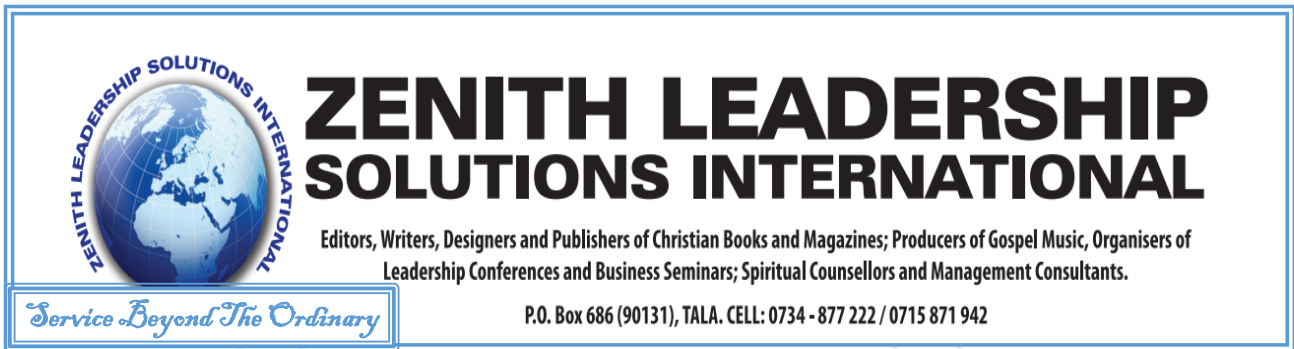
Kenya Certificate of Secondary Education.

Instructions to candidates

1. Write your name and Index number at the right hand corner of each print out.
2. Write your name and Index number on the CD provided.
3. Write the name and version of the software used for each question attempted in the answer sheet
4. Answer **all** the questions
5. Passwords **should not be used** while saving in the CD provided.
6. All answers **must** be saved in your CD provided.
7. Arrange your printouts and staple them together
8. Hand in all the **printouts** and the CD used

QUESTION 1

- a) Use DTP software to design the following business card using the following layout specifications:
- (i) Paper size A4 portrait. (2 marks)
 - (ii) Set the margins to 0.5 inches all round. (2 marks)
 - (iii) Divide the page into TWO columns (2 marks)
 - (iv) The border should occupy the first column (2 marks)
- b) Prepare the publication as exactly as it appears and save it as Business card. (10 marks)



- c) Insert your full name above the heading “ZENITH LEADERSHIP...” and centre it across (5 marks)
- d) Create the logo to occupy between 0.8” to 1.80” left and 0.70” to 1.85” from top. (5 marks)
- e) The title should occupy between 1.70” to 7.50” across and 0.75” to 1.45” from top. Font Arial black with italics and fill effect pattern of dark horizontal. (5 marks)
- f) The words “ZENITH LEADERSHIP” should occupy 2.50” to 5.70” across and 1.50” to 2.00” from top. Font Book antique size 26, bold and centered. (4 marks)
- g) The rest of the text is in font Bodoni MT size 12. (2 marks)
- (i) Align all the text as shown. (2 marks)
 - (ii) Group the publication as one. (2 marks)
 - (iii) Fit FOUR copies of the design into a single page. (2 marks)
- h) Include a page header with your index number. (2 marks)
- i) Save as Updated Business card. (1 mark)
- j) Print the publication **Business card** and **Updated Business Card**. (2 marks)

Question 2

The table below shows records extracted from Motors Sales Company Database. Create a database and name it MOTOR SALES.

(1 mark)

Customer Name	Customer Address	Customer Town	Car Reg No	Car Type	Car Make	Car price	Customer ID	Amount paid
Ogotu	254	Nakuru	KBJ 001T	Truck	Nissan	1,100,000	B001	800,000
John	678	Eldoret	KCM 002M	Bus	Mazda	2,400,000	B002	2,000,000
Uhuru	963	Nairobi	KBB 003V	Saloon	Toyota	800,000	B003	800,000
Ogotu	147	Nakuru	KCJ 004B	Pickup	Peugeot	1,000,000	B004	700,000
Chumba	456	Bungoma	KCH 678B	Lorry	Isuzu	3,000,000	B005	2,000,000
Kariuki	789	Webuye	KBB 006N	Pickup	Toyota	1,800,000	B006	1,600,000
John	678	Eldoret	KBJ 007D	Bus	Scania	7,500,000	B002	7,500,000
Uhuru	963	Nairobi	KCC 678G	Truck	Toyota	1,800,000	B003	1,800,000
Phillip	159	Kisumu	KCJ 009H	Saloon	Nissan	9,00,000	B007	900,000
Ogotu	254	Nakuru	KCH 010L	Pickup	Isuzu	1,500,000	B001	1,200,000
Uhuru	357	Kisumu	KCJ 011J	Saloon	Peugeot	600,000	B008	600,000

KCSE 2026 FINAL PREDICTIONS							CONFIDENTIAL	
Kariuki	789	Webuye	KBG 012B	Bus	Isuzu	10,000,00 0	B006	9,500,00 0
Ogututu	147	Nakuru	KDA 013A	Truck	Nissan	2,700,000	B004	2,700,00 0

- Using the data above, create a table that will hold Car details and another table to hold Customer details. Name them **TABLECAR** and **TABLECUSTOMER** respectively and set appropriate *primary keys*. (4 marks)
- Enforce referential integrity between two tables. (2 marks)
- Create different input forms for each table. Name them **FORMCAR** and **FORMCUSTOMER**. Use them to enter data into the tables. (12marks)
- Display a report only showing the details of the Customers who have cleared paying for the Car. Name the report **REPORTCLEARED**. Add “**CLEARED CUSTOMERS**” as the title of the report. (7 marks)
- Using the two tables create an *outlined report* showing the *customer details, the total amount paid by each customer and the total amount received by the company*. Name the report **SUMMARY** and the title as “**OVERALL CUSTOMERS REPORT.**” (8 marks)
- Create a query to display the Car details with balances of less than 300,000. Name the query as **BALQUERY**. (4marks)
- Create a report showing the *Car type, the total sales for each car type and the grand total*. Name the report as **REPORTGRAND**. (6 marks)
- Using landscape orientation, print **REPORTCLEARED**, **SUMMARY** and **REPORTGRAND** with *footers bearing your lastname and index number at the center of the page*. (6 marks)

KCSE 2026 FINAL PREDICTIONS

CONFIDENTIAL EXAM 5

451/1

COMPUTER STUDIES

PAPER 1**TIME: 2½ HOURS**

NAME.....

SCHOOL..... SIGN.....

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

*Kenya Certificate of Secondary Education.***INSTRUCTIONS TO CANDIDATES**

- 1) This paper consists of **TWO** sections **A** and **B**
- 2) Answer **ALL** the questions in section A.
- 3) Answer questions **16** and any other **THREE** questions from section B

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SECTION	QUESTION	SCORE
A	1- 15	
	16	
	17	
	18	
	19	
	20	
	TOTAL SCORE	

SECTION A(40 Marks)

Answer all the questions in this section

1. Explain disk formatting (2mks)

2. (a) Explain why the following controls should be implemented for computer based system

(2mks)

(i) Data Back- ups

(ii) Password

(b) List two examples of utility software in operating systems

(2mks)

3. Differentiate between **source** code and **object** code

(4mks)

4. The cells P3 to P20 of a worksheet contain remarks on students ' performance such as very good, good, fair and fail depending on the average mark. Write a formula that can be used to count ALL students who have the remark "very good".

(3 mks)

5. State the purpose of registers in a computer system

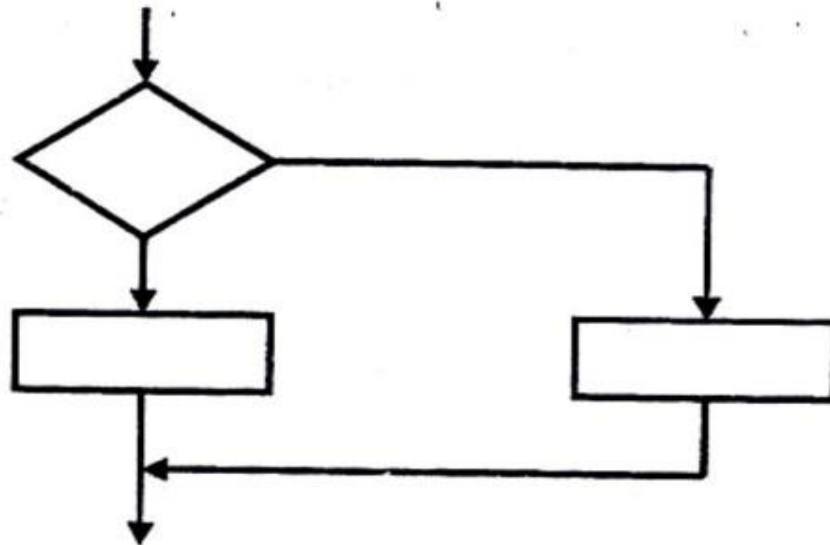
(1 mk)

6. Give Three advantages of using GUI based operating system over a command line interface

(3mks)

7. (a) Name the control structure depicted by the flowchart below

(1 mk)



(b) Explain the following terms as used in system implementation

(2 mks)

(i) parallel running

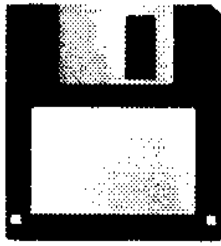
ii) Direct change over

8. (a) Name **two** methods of representing **signed** numbers in computers

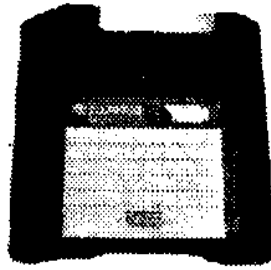
(2 mks)

(b) Identify the **four** types of storage media shown below.

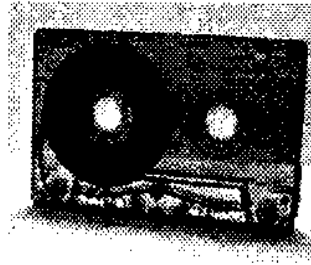
(2 marks)



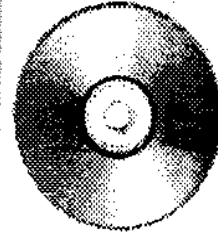
i



ii



iii



iv

c) Compare the storage device (i) and (iii) above.

(1 mark)

9. Differentiate between **Random** and **indexed-sequential** file organization methods (2mks)

10. Name two types of relationships that can be applied in database design. (2mks)

11. Explain the following terms as used in word processing: (3 mks)

a) Indenting

b) Alignment

c) Word wrap

12. Outline **two** ways in which computers can be applied in hotels. (2mks)

13. a) Explain binary coded decimal code of data representation. (1mk)

b) Define the term firewall. (1 mark)

14. Arrange the following data units in ascending order of size.

BYTE, FILE, BIT, NIBBLE (2mks)

15. State two health issues that may result from prolonged use of computers. (2mks)

SECTION B (60 MKS)

ANSWER QUESTION 16 AND ANY OTHER THREE QUESTIONS FROM THIS SECTION

16. a) State the stage of program development in which: (4mks)

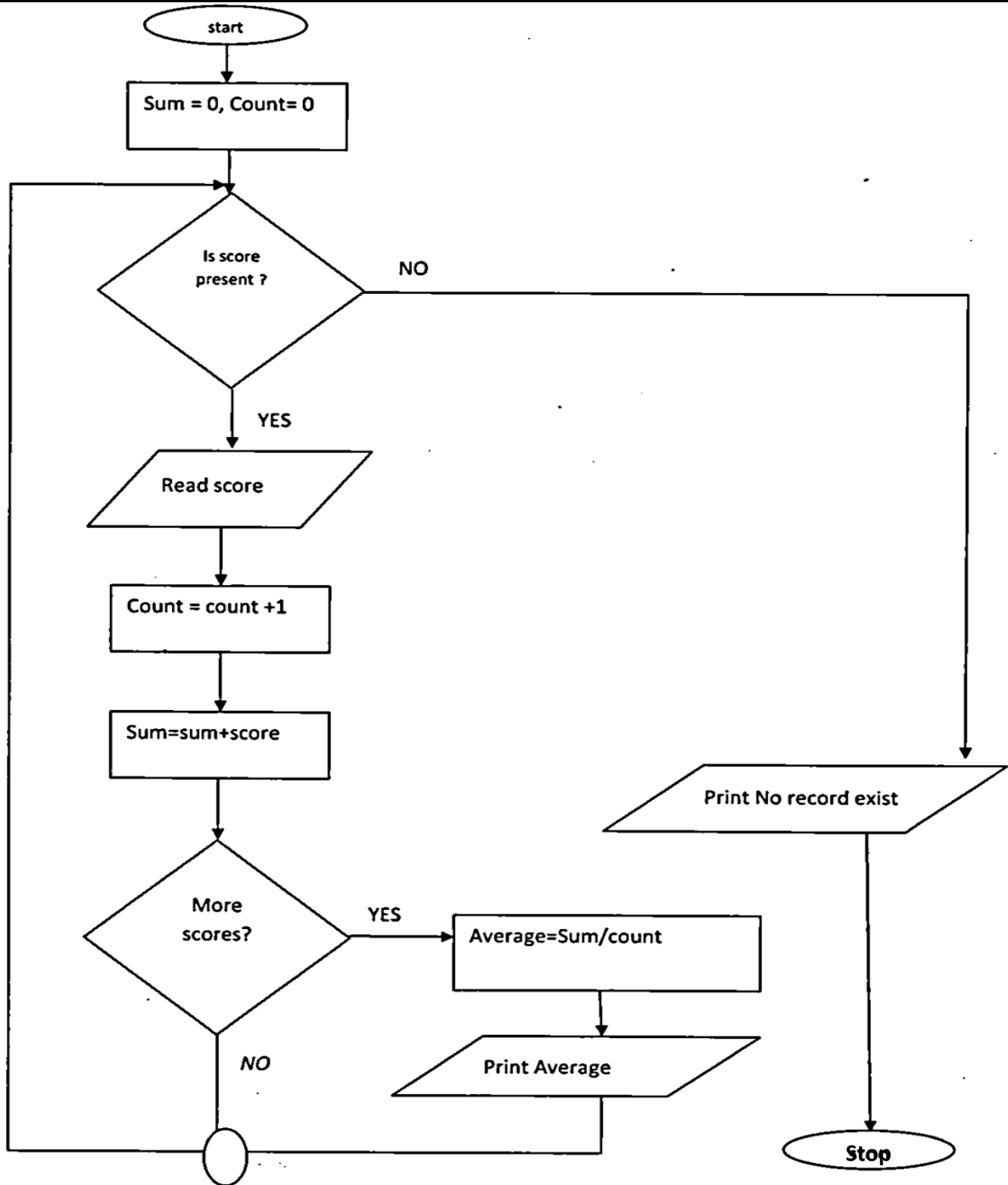
i) A flowchart would be drawn

ii) The programmer would check whether the program does as required program

iii) The user guide would be written

iv) The user guide would be written

Study the flowchart below and answer the questions that follow.



b) Translate the following flowchart into a pseudo code. (8 marks)

c) Assuming the following score are entered 0, 20 and 60 respectively what would be output from the flowchart. (3 marks)

17. a) Convert each of the following binary numbers to decimal equivalent given that the left most digit is a sign bit. (4 marks)

i) 00101101_2

ii) 11001001_2

b) Convert the decimal number 0.42 to 6 bit binary notation. (4 marks)

a) Using two's complement, subtract 11_{10} from 8_{10} , leaving your answer in binary notation. (3 marks)

d) Perform the following binary operation. (2 marks)
 $11001_2 + 1101_2 + 101_2$

e) Using place value method, convert 45_{10} to its binary equivalent. (2 marks)

18. a) What is virtual reality? (1 mark)

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

i) Head gear

ii) Body suit

c) What is Artificial intelligence? (1 mark)

d) State and explain **three** components of an expert system. (6 marks)

e) Explain method of information gathering in system development. (3 marks)

f) List **two** application area of virtual reality. (2 marks)

19. a) The following is an extract of a select query (QBE) in Microsoft Access about hospital database

Field:	Patient_No	Last_Name	First_Name	Gender	Date_of Birth	Date Admitted
Table:	patient	patient	patient	patient	patient	Ward
Sort:						
Show:	☒	☒	☒	☒	☒	☒
Criteria:						
or:						

- i) Other than select queries name **two** other queries used in databases. (2 marks)
- ii) Write an expression that will return only those patients who are 20 years' old.(3 marks)
- b) Differentiate between bold and unbold controls as used in database forms. (2 marks)
- c) Give **two** reasons why input screens are better data entry designs than entering data directly into a table. (2 marks)
- d) The figure below is an extract of a worksheet containing information on household items. Use it to answer the following questions:

	A	B	C	D	E	F
1	Item description	No of units	Cost per unit	Total cost		
2	Maize flour	20	210			
3	Tea leaves	64	185			
4	Sugar	77	149			
5	Salt	28	25			

- i) Write a formula to calculate the total cost of sugar. (1 mark)
- ii) The prices of all items increased by 10% and the value 10% is placed in cell B8. Using cell addresses with absolute referencing only, write a formula to calculate the new unit of the salt. (2 marks)
1. Write a function to display the number of cells in which the cost per unit is equal to 25. (2 marks)
- iv) Write a function to display the least total cost for all items. (1 mark)
20. A school computer laboratory is scheduled to undergo major renovations. The lab is scheduled to receive new computer whose specifications are given below:-
- Pentium IV 2.8GHz processor
- 40GB HDD
- 3½ FDD
- 256MB RAM
- 56 x CD ROM
- 17"SVGA TFT monitor
- The computers are going to be networked and will be able to browse the internet.
- a) Explain what is meant by the terms:- (2 marks)

- i) FDD
 - ii) HDD
 - iii) SVGA
 - iv) TFT
- b) The computer is to be networked, name **one** extra device that should be fitted on every computer to enable this to happen. **(1 mark)**
- c) The computer is to receive internet facilities through the server on a dial; up system. Name and describe the function of a special device that needs to be connected to the server to complete the connection. **(1 mark)**
- d) i) The school has to apply star topology to link up the computer. List **two** advantages of this type of topology. **(1 mark)**
- ii) Name the central device used to connect the computers in this topology. **(1 mark)**
- e) List **two** other types of topologies that the school could have opted for. **(1 mark)**
- f) List **four** advantages of using a network. **(2 marks)**
- g) i) Data transmission via the internet is done using a mode known as packet switching. Describe this data transmission mode. **(1 mark)**
- ii) Name **two** other modes of transmission. **(1 mark)**
- h) i) The school's LAN is done using UTP cable. List **two** advantages of using this type of cable. **(1 mark)**
- ii) List **two** advantages of using fibre cable in networking. **(1 mark)**
- i) Data flows in the school's LAN in a duplex manner. Discuss **two** other types of data transmission in network giving examples. **(2 marks)**

KCSE 2026 FINAL PREDICTIONS**CONFIDENTIAL EXAM 5**

451/2

COMPUTER STUDIES**PAPER 2****TIME: 2½ HOURS**

NAME.....

SCHOOL..... SIGN.....

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

*Kenya Certificate of Secondary Education.***INSTRUCTIONS TO CANDIDATES**

- 1) Indicate your name and index number at the right hand corner of each printout
- 2) Write your name and index number on the **CD/removable** storage medium provided
- 3) Write the name and version of the software used for each question attempted in the answer sheet provided
- 4) Answer all the questions
- 5) All questions carry equal marks
- 6) Passwords should not be used while saving in the **CD/removable** storage Medium
- 7) Marked printout of the answers on the sheet
- 8) Arrange your printouts and staple them together
- 9) Hand in all the printouts and the **CD/removable** storage medium used
- 10) All the work should be saved at the desktop of your computer in a folder named with our name and index number. All the work in your folder should be burned to the **CD/WR** provided

1. The following table contains details of Baharini Girls school

(50MARKS)

ADMN O	Stud name	DOB	KCPE MARKS	RECEIPT NO	Fees Paid(kshs)	Fees Bal(kshs)	House No	House Name	House Capacity
1001	Alice K	7/4/19 99	380	101	20000	5000	H20	simba	200
1050	Lilly O	2/3/20 02	350	894	18000	7000	S08	chui	150
1202	Mary	8/10/2 000	400	500	23000	2000	P30	Kifaru	180
1025	Juliet	4/4/20 00	358	258	25000	0	H20	Simba	200
1200	Joan	5/1/20 01	398	259	15000	10000	S08	chui	150
1278	Milly	3/4/19 98	402	200	15000	10000	H20	simba	200
1201	Linet	2/7/19 98	356	205	20000	5000	P30	kifaru	180
1203	Lisper	9/5/20 01	403	209	25000	0	S08	chui	150

REQUIRED

- Create a database file that can be used to store the above data. Name the file Baharini school database. (2mks)
- Create Three tables, one for **student details**, **Accounts table** and **dormitory table** (11 mks)
- Create a relationship between the three tables (3mks)
- Using appropriate forms, Enter the information given into the three tables (15mks)
- Create a query for “ **all students housed in Chui**” (3mks)
- Design a “**current age query**” to display current ages of all the students (5mks)
- Create a report “**Hefty Balances**” showing students with fees balances of more than 10000kshs (3mks)
- Create a report to show all students admitted in the school (3mks)
- Print, The **three tables**, **Hefty balances report** and **all students housed in Chui report** (5mks)

2. QUESTION 2 (50MARKS)

Use a spreadsheet to manipulate data in the table below.

Adm No	Name	Stream	Comp	Art	Bus	Eng	Mat	Student mean	Rank
C001	Barasa	H	56	45	36	56	26		
C002	Wangila	K	58	57	90	54	23		
C003	Wafula	H	48	56	54	45	25		
C004	Wanjala	K	78	95	78	46	24		
C005	Kerubo	H	49	86	68	35	52		
C006	Akinyi	K	56	45	25	63	54		
C007	Odhiambo	H	75	78	45	65	56		
C008	Okunyuku	K	89	69	65	53	51		
C009	Nekesa	H	69	58	45	54	52		
C010	Simiyu	H	85	46	78	52	53		
	TOTAL								
	TOTAL	FOR H							
	TOTAL	FOR K							

- Enter the data in all bordered worksheet and auto fit all column. Save the workbook as **mark 1** (15mks)
- Find the total marks for each subject (3mks)
- Find total for each subject per stream using a function (5mks)
- Find mean mark for each student using a function (5mks)
- Rank mean student in descending order using the mean (5mks)
- Create a well labeled column chart on a different sheet to show the mean mark of every student. Save the workbook as **mark 2.** (7mks)
- Using **mark1**, use subtotals to find the average mark for each subject per stream. Save the workbook as **mark 3** (7mks)
- Print **mark 1,mark 2** and the **chart** (3mks)

KCSE 2026 FINAL PREDICTIONS

CONFIDENTIAL EXAM 6

451/1

COMPUTER STUDIES

PAPER 1

TIME: 2½ HOURS

NAME.....

SCHOOL..... SIGN.....

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

Kenya Certificate of Secondary Education.

INSTRUCTIONS TO CANDIDATES

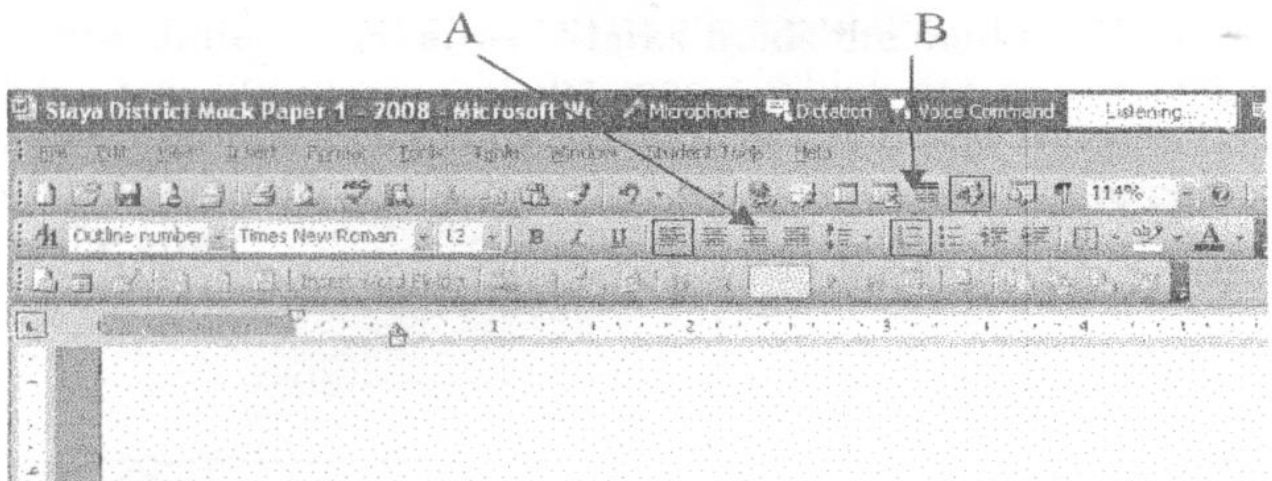
- ✓ This paper consists of two section **A** and **B**
- ✓ Answer all questions in section **A** (40 marks)
- ✓ Answer question 16 (**Compulsory**) and any other **THREE** questions in section **B**.

FOR EXAMINERS USE ONLY

SECTION	QUESTION	SCORE
A	1-15	
B	16	
	17	
	18	
	19	

SECTION A (40 MARKS)**Answer ALL the questions in this section**

1. Define the following terms (4mks)
 - i) Multiplexing
 - ii) Baseband signal
2. Explain the difference between digital signal and analog signal in data communication (2mks)
3. List down two types of computer viruses (2mks)
4. Below is a graphical representation of a section of a Microsoft words application window.
Use it to answer the question that follow.

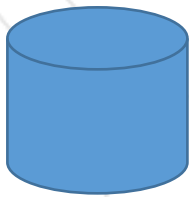


- Give the uses of the icons labeled A and B (2mks)
5. Define the following terms as used in disk management (2mks)
 - i) Partitioning
 - ii) Defragmentation
 6. State three ways in which your school librarian can use a computer (3mks)
 7. i) Write the acronym UPS in full? (1mk)
ii) Explain the uses of UPS? (1mk)
 8. a) Give two possible ways of fitting the document in one page (2mks)
b) 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 booting. It hand so often alongside abnormal restarting. State any two possible causes for the computer's behavior. (2mks)

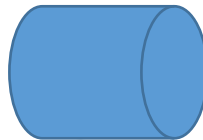
9. Differentiate between real time processing and batch processing giving examples where each could be used. (4mks)
10. In Kenya Tea Packers Company several people are employed as record clerks., typists and messenger. The company intends to introduce a computerized system in all the departments. Suggest three reasons that would make workers unhappy with the new system. (3mks)
11. Give two advantages of an electronic spreadsheet over traditional analysis ledger sheet (2mks)
12. Explain the following terms as used in information Technology with reference to software purchase:-
- i) User friendliness (1mk)
 - ii) Authenticity (1mk)
13. While purchasing computers for his school the principal Musambweni high school decided to consult an expert. As a computer student advised him on four hard ware considerations (2mks)
14. Give the names of the following system flowchart symbols (2mks)



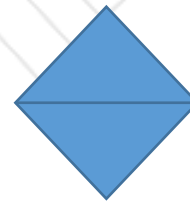
A



B



C



D

15. State any two features of a user friendly program (2mks)

SECTION B (60 MARKS)

Answer question 16 and any other three questions from this section

16. a) State three qualities of a good pseudocode? (3mks)
- b) i) State the 3 translators used in programming (3mks)
- ii) List two examples of;
- i. Third generation languages (1mk)
 - ii. Object oriented languages (1mk)
- c) Draw a flowchart that was used to come up with the following pseud code (7mks)
- Start
N=0
X=0
While n < 3
Repeat
X = X + 1

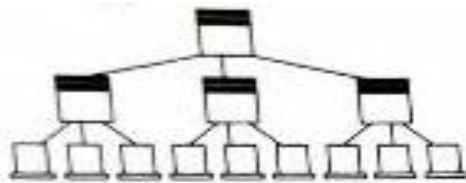
While $x < 2$

$N = N + 1$

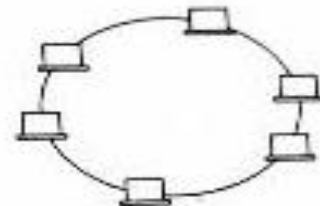
End while

Stop

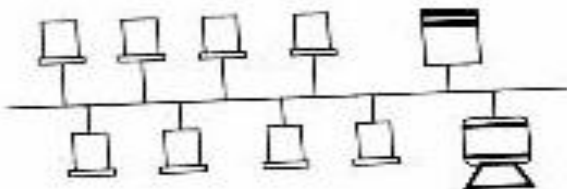
17. a) The diagram below shows four common network topologies A, B, C and D.



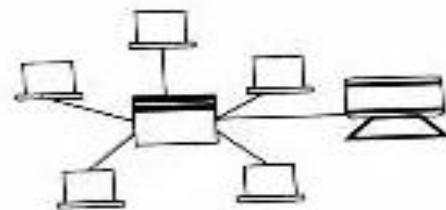
Topology A



Topology B



Topology C



Topology D



Server



Terminal



Printer

- i) Name the network topologies A, B, C and D (4mks)
 - ii) Explain what happens if server X topology A fails (1mk)
 - iii) List two problems associated with network topology B (2mks)
 - iv) List two disadvantages associated with network topology D (2mks)
- b) Differentiate between Internet and World Wide Web. (2mks)
- c) Convert the following binary number, 11001011.001 into decimal form. (4mks)

18. a) Human activity systems are said to be soft systems. Give the reasons why they are said to be so (3mks)

b) What are hard information systems (2mks)

c) Discuss any five characteristics of a system (10mks)

19. a) One of the functions of an operating system is job scheduling. Explain what is meant by job scheduling. (2mks)

b) List and explain three types of user interfaces. (6mks)

c) Describe the following categories of software (4mks)

i) Firmware

ii) Proprietary software

d) A new company ABC intends to go into business of desktop publishing. Advise the company on three computer hardware specification features to consider as a measure of enhancing performance. (3mks)

20 a) Briefly explain the following terms as used in spreadsheet (4mks)

i) Cell

ii) Range

iii) Value

Function

b) List three paragraph formatting features of word processors (3mks)

c) Explain the difference between the printing of multiple pages and multiple copies (2mks)

d) Distinguish between a worksheet and a work book (2mks)

e) The following is an excel worksheet showing the performance of students in Tana class.

A	B	C	D Cat	E Cat 2/50	F	G	H
	Adam	Student name	1/50		Total / 40	Exam / 60	Total
1	4321	DollineMbesa	30	28	(a)	45	(b)
2	4333	SelinaMbugua	20	29		55	
3	4330	Winnie Wanjema	25	26		50	
4	4322	MagaretWambari	27	24		43	
5	4324	FaniNjuguna	28	24		42	
6		Maximum	(c)				
7		Minimum	(d)				
8		Average	(e)				
9							

Using the above worksheet write the following formula to calculate the values in cells labeled (4mks)

KCSE 2026 FINAL PREDICTIONS

CONFIDENTIAL EXAM 6

451/2

COMPUTER STUDIES

PAPER 2

TIME: 2½ HOURS

NAME.....

SCHOOL..... SIGN.....

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

Kenya Certificate of Secondary Education.

451/1

COMPUTER STUDIES

PAPER 2

PRACTICAL

INSTRUCTIONS TO CANDIDATES

- ✓ Type your name and admission number at the top right hand corner of each printout.
- ✓ 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 diskettes.
- ✓ Answer all questions
- ✓ All questions carry equal marks
- ✓ All answers must be saved in your diskette. Make printouts of the answers on the answer sheets provided.
- ✓ Hand in all the printout and the diskette
- ✓ Candidates may be penalized for not following instruction given in this pager
- ✓ Arrange your printout and staple them together.

QUESTION 1

1. Table 1, table 2 and table 3 are extracts of records, kept in a carpentry shop. Use the information to answer the questions that follow;

CAPENTER_ID	CAPENTER NAME
CAP_001	JAMES
CAP_002	JOHN
CAP_003	ALEX
CAP_004	ISAAC
CAP_005	MAURICE

CUSTOMER_ID	CUSTOMER NAME
CUST_01	MARY K.
CUST_02	DIANA K.
CUST_03	ALEX N.
CUST_04	MARTHA K.
CUST_05	SARAH W.
CUST_06	JOHNSON G.

**Carpenter Table
Order Table**

Customer Table

CARPENTER_ID	CUSTOMER_ID	ORDER_NO	ITEM ORDERED	MONTH	AMOUNT
CAP_001	CUST_01	1721	Bench	January	18,000
CAP_002	CUST_02	1722	Coffee table	January	25,000
CAP_003	CUST_03	1723	Office table	January	10,000
CAP_004	CUST_04	1724	Single bed	January	18,000
CAP_005	CUST_05	1725	Arm chair	January	60,000
CAP_001	CUST_01	1726	Double bed	February	75,000
CAP_002	CUST_04	1727	Dining table	February	85,000
CAP_004	CUST_03	1728	Arm chair	February	60,000
CAP_001	CUST_02	1729	Double decker bed	February	72,000
CAP_002	CUST_06	1730	Kitchen table	February	82,000
CAP_004	CUST_02	1731	Bench	March	18,000
CAP_003	CUST_06	1732	bench	march	18,000

- a) i) Using database application package, create a database file named;
CARPENTER INFORMATION (1mk)
- ii) Create three tables named **Carpenter Table**, **Customer Table** and **Order Table** that will be used to store the above data. (10mks)
- iii) Set the primary key for the tables (2mks)
- iv) Create relationship among the tables (2mks)
- b) i) Create a data entry form for each table (3mks)
- ii) Enter the data in **Carpenter Table**, **Customer Table** and **Order Table** respectively (11mks)
- c) i) Create a query named **individual income** to display the amount received from each customer every month. (4mks)

- ii) Create a database object that computers Total income for each month. Save the query as **Totalincomenomnthly**. (6mks)
- d) Create a query named **loyalty** to compute the total number of orders made by each customer over the three months. (3mks)
- e) Create a report to display order details, save the report as Order report (4mks)
- f) Print the three tables and the report (4mks)

QUESTION 2

Use a spreadsheet to manipulate data in the table below.

Adm No	Name	Stream	Comp	Art	Bus	Eng	Mat	Student mean	Rank
C001	Barasa	H	56	45	36	56	26		
C002	Wangila	K	58	57	90	54	23		
C003	Wafula	H	48	56	54	45	25		
C004	Wanjala	K	78	95	78	46	24		
C005	Kerubo	H	49	86	68	35	52		
C006	Akinyi	K	56	45	25	63	54		
C007	Ddhiambo	H	75	78	45	65	56		
C008	Dkunyuku	K	89	69	65	53	51		
C009	Nekesa	H	69	58	45	54	52		
C010	Simiyu	H	85	46	78	52	53		
	TOTAL								
	TOTAL	FOR H							
	TOTAL	FOR K							

- i) Enter the data in all bordered worksheet and auto fit all column. Save the workbook as **mark 1** (15mks)
- j) Find the total marks for each subject (3mks)
- k) Find total for each subject per stream using a function (5mks)
- l) Find mean mark for each student using a function (5mks)
- m) Rank mean student in descending order using the mean (5mks)
- n) Create a well labeled column chart on a different sheet to show the mean mark of every student. Save the workbook as **mark 2**. (7mks)
- o) Using **mark1**, use subtotals to find the average mark for each subject per stream. Save the workbook as **mark 3** (7mks)
- p) Print **mark 1,mark 2** and the **chart**

KCSE 2026 FINAL PREDICTIONS**CONFIDENTIAL EXAM 7**

451/1

COMPUTER STUDIES**PAPER 1**

TIME: 2½ HOURS

NAME.....

SCHOOL..... SIGN.....

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

*Kenya Certificate of Secondary Education.***Instruction to Candidates.**

- (a) Write your Name and Index Number in the spaces provided at the top of this paper.
 (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 **ALL** the questions in Section **A**.
 (e) Answer question **16** and any other **THREE** questions from Section **B**.
 (f) All answers should be written in the spaces provided on the question paper.

FOR EXAMINER'S USE ONLY.

Section	Question	Score
A	1 - 15	
B	16	
	17	
	18	
	19	
	20	
TOTAL		

SECTION A (40 MARKS)

Answer ALL Questions from this section

1. State three reasons why it is difficult to control, detect and prevent computer crimes (3marks)
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)
Give a reason for your answer. (1mark)
3. Last year 2020 when corona virus was declared a pandemic internationally most companies allowed 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 Mks)
4. Using a well labelled diagram, describe the fetch and execute cycle. (3 Marks)
5. 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. (3mks)
6. Differentiate between COM ports and LPT ports. (2 marks)
7. State any two advantages of the artificial intelligence. (2 Marks)
8. (a) The word COM appears several times in an essay. Jane would like to change the word to COMPUTER. Advise her on how she can accomplish this task using a word processor. (2 Mks)
9. Anita was working on her computer studies project. She was worried of the media to use for storing her data. She settled on a media that used serial file organization. How are files organized on a storage medium using this method? (1 mark)
(b) List two advantages offered by this type of file organization. (2marks)
10. (a) Rose wants to send an email to Jack. Explain two items that must be present for the mail to be sent. (2 Marks)
(b) (i) Define the term network protocol (1 Mark)
(ii) Name any **two** examples of network protocols (1 Mark)
11. (a) What is the importance of layering in DTP? (1 Mark)
(b) Distinguish between column guides and margin guides as used in DTP. (2 Marks)

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

	A	B	C	D	E	F
1						
2	MWALIMU CONSULTANCY 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 Mk)**

(b) Write down a formula that used to return the rank of Leila based on average score. **(1 Mark)**

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

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)**

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)**

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)**

SECTION B (60 MKS)

Answer question 16 (Compulsory) and any other THREE questions from this Section.

16. To maintain a strategic fit Safaricom is introducing a tariff called the mega tariff that will lower costs to Safaricom to Safaricom calls and calls to other networks. Calls to Safaricom networks will be charged according to the time of the day as listed below:

- Between 8am to 12 noon – 6 Ksh
- Between 12 noon to 2pm-0.8 Kshs
- Between 6 to 1 am -4Kshs

-between 1 am t 8am- 1Kshs

Internal calls to other networks are charged at a fixed rate of 7 Kshs between 8am to 8pm and to while international calls are charged at a rate of 25 Kshs between 8am to 8pm and Kshs 35 for the rest of the day. All calls are charged per minute usage.

Mr. Wasswa Bbaale a business man who makes both internal and internal calls would like to make maximum use of this of this tariff.

- a) Write a pseudo code that would show him know the charges of calls with an appropriate label when he the inputs type of call and the time where appropriate. Use a 24 hour clock. **(8mks)**
- b) Design a flowchart for the pseudo code in 16(a) above **(7mks)**

- 17. a) Explain how an operating system controls I/O devices. **(2marks)**
- b) Maintaining security is one of the functions the operating system. Explain how the operating system maintains security **(2marks)**
- c) Distinguish between Indexed sequential and direct file organizations **(2marks)**
- d) i) Using appropriate examples, differentiate between distributed and centralized processing modes **(3marks)**
- ii) State one advantage and one disadvantage of distributed processing modes in 17(d) (i) **(2marks)**
- e) i) With reference to an operating system, differentiate between formatting and partitioning. **(2marks)**
- ii) List any **TWO** types of user interface. **(2mark)**

18.

- a) Using eight bits and twos complement, subtract 78_{10} from 17_{10} . Give your answer in decimal notation **(3marks)**
- b) Convert 11011011111.1111_2 to:
 - i) Octal **(2marks)**
 - ii) Hexadecimal **(2marks)**
 - iii) Decimal **(2marks)**
- c) State any **Two** methods used to gain illegal access to a computer system **(2marks)**
- d) i) Distinguish between peer-to-peer and client –server LANs. **(2marks)**
- ii) Atieno was very happy when she bought a Safaricom 2G modem for she was able to easily connect her computer to the Internet. After six months she noticed it was taking her too long to connect to the Internet. State two possible causes of the problem. **(2marks)**

- 19. a) i) Explain any **two** causes of system change. **(2marks)**
- ii) Explain any **THREE** causes of system maintenance. **(2marks)**
- b) i) Use of questionnaire is one of the most popular fact finding method. State any **TWO** advantages and **TWO** disadvantages of using this method to gather data. **(2marks)**
- ii) Explain the importance of requirement specification phase of Systems development. **(2marks)**
- c) Explain **TWO** reasons why a new system is tested before implementation. **(2marks)**

- d)i) State two duties performed by a system administrator. (1mark)
- ii) The principal of a school is attempting to convince his staff to use CAL and CAI software. State one benefit and one limitation of using such software. (2marks)
- e) State one advantage and one disadvantage of using expert systems in medicine (2marks)

20.a) Explain three types of communication links that may be used to get an Internet connection (3m)

- b) Differentiate between the Internet and World Wide Web. (2marks)
- ii) Technology has been blamed for polluting the environment. Explain how computer technology has contributed to this. (2marks)

c) A Company that makes and sells vehicles receives orders from various clients. The company wants to enter their orders into a database. Study the table structure below and answer the questions that follow.

Field Name	Data Type	Field Size
Order Number	Number	Long Integer
Order Date	Date/Time	
Supply Date	Date/Time	
Product code	Text	5
Customer ID	Number	Long Integer
Delivery address	Text	30
Product Type	Text	15
Product Name	Text	10
Quantity Ordered	Number	Long integer
Product Price	Number	Long Integer

- i) Split the above structure into **THREE** tables and for each table identify an appropriate primary key. (5marks)
- ii) Design well labeled tables structures and identify foreign keys (3marks)

KCSE 2026 FINAL PREDICTIONS**CONFIDENTIAL EXAM 7**

451/2

COMPUTER STUDIES**PAPER 2****TIME: 2½ HOURS**

NAME.....

SCHOOL..... SIGN.....

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

Kenya Certificate of Secondary Education.

451/2

COMPUTER STUDIES**Paper 2 (Practical)****TIME: 2½ HOURS****INSTRUCTIONS TO CANDIDATES**

1. Write your name and index number in the spaces provided above.
2. Write the name and version of the software used for each question attempted in the answer sheet.
3. Answer all questions.
4. All questions carry equal marks.
5. Hand in all the printouts and the soft copy of your work on CD.

QUESTIONS

1. (a)(i) The extract below shows a spreadsheet used to compute the toll charges for a highway based on the type of vehicle, tonnage and charge per kilometer for usage.

	<u>HIGHWAY TOLL CHARGES</u>					
Registration	Vehicle Type	Weight	Distance	Normal Charge	Penalty Charge	Total
KCY 789 M	PickUp	6	12			
KCR 769 L	Car	4	40			
KCF 724 C	PickUp	6	32			
KCM 737 N	Truck	12	25			
KCA 745 W	Lorry	20	28			
KCP 756 H	Truck	10	12			
KCU 778 J	Car	4	8			
KCZ 701 A	PickUp	8	25			
KCB 781 E	Car	6	4			
KCV 743 H	PickUp	4	20			
KCQ 735 X	Truck	8	32			
KCT 721 K	Lorry	10	25			
KCD 792 V	Truck	12	28			
KCZ 784 P	Car	6	12			
KCB 756 C	Truck	10	8			
KCE 734 D	Car	4	25			
KCF779 E	PickUp	6	32			
KCG 700 F	Lorry	12	25			
KCH 723 K	Truck	20	28			
KCJ 711 W	PickUp	10	12			
KCR 712 D	Car	4	8			
KCD 774 B	PickUp	8	25			
KCS 756 M	Truck	6	4			
KCA 745 W	Car	4	20			
			<u>Total</u>			

(ii) Create a workbook and save the workbook as toll. (2 Marks)

(iii) Fill the data in the worksheet1 and rename the worksheet as tollOriginal. (14 Marks)

Vehicle Type	Max Allowed Weight(Tns)
PickUp	6
Car	4
Truck	8
Lorry	10

(b)(i) The NormalCharge column is calculated based on the table below.

(ii) The PenaltyCharge column is calculated based on the table below. The penalty is based on any weight above Maximum allowed weight for a vehicle type for every kilometer of the the usage.

(8 Marks)

Vehicle Type	Penalty Charge (Ksh)per Km
PickUp	10
Car	5
Truck	15
Lorry	20

(iii) The TotalCharge is based on summation of NormalCharge and PenultyCharge . Create a column TotalCharge and use a function to Calculate the Total Charge **(2 Marks)**

(iv) Create the Running Totals for Normal Charge, Penulty Charge And Totalcharge **(4 Marks)**

(b)(i) Copy The data in the OriginalToll to another worksheet rename the workshhet as Sorted(1 Mark)

(ii) Sort the Data is ascending order of Vehicle type Sorted worksheet. **(4 Marks)**

(iii) Create subtotals based on the vehicle Type **(4 Marks)**

(iv) Draw a column chart based on The Vehicle Type subtotals and Total Charge **(8 Marks)**

2. a) Create a database called **Aberdare bottles ltd** and create the following tables **(15 marks)**

Table 1: Employee

Employee_ID	EmployeeName	Department	YearOfEmployment
101	Kibet Arap Kamau	Human resource	1985
102	Janet Atieno	Procurement	1990
450	Kimani Koigu	Accounts	2000
891	Moraa Kerubo	Human resource	2010

Table 2: Sales

ProductName	Employee_ID	ProductID	SalesAmount	Salary
Tea leaves	101	Xc101	5000	
cocoa	102	Xp105	15500	

coffee	450	Xvb11	9500	
Chocolate	891	X56po	30000	

Table 3: Department

Employee_ID	Department_Name	HeadOfDepartment	NoOfEmployees
101	Human resource	B.N. Komu	52
102	Procurement	J.K. Wanjiru	12
450	Accounts	P.G. Otindo	20
891	Human resource	M.M. Jerotich	10

- i) Create **relationship** among the tables (2 marks)
- ii) Create **three** input screens (**forms**) and use them to enter the data into the tables above (6 marks)
- iii) Create a query called **Start_K** and use it to display **EmployeeName** that start with letter **K** (3 marks)
- iv) Display the **no of years** an employee has worked given that the current year is 2018. Save the **report** as **AGE**. (3 marks)
- v) Create a query called **Yote** to display the following fields (2 marks)
 - **Employee_ID**
 - **EmployeeName**
 - **Department_Name**
 - **ProductName**
 - **Salary**
 - **HeadOfDepartment**
- vi) Copy **Yote** query (in v above) and save the new query as **MPYA:-** (1 marks)
Use MPYA query to
 - ✓ Calculate the salary given that: salary is 10% of the **SalesAmount** (2 marks)
 - ✓ Display salary in ascending order (2 marks)
 - ✓ Display employees from **human resource** department whose **SalesAmount** is **greater than 12000**. (2 marks)
- vii) Create a form called **AberdareForm** using **Yote** query (in v above) and use it to answer the questions below:-
 - ✓ Count no of employees (2 marks).
 - ✓ Add a title of the form as **“Aberdare bottles ltd-2018”** (2 marks)
 - ✓ Insert **date and time** on the form header use (=NOW()) (2 marks)
- viii) **Print** Age, Sales table, and AberdareForm (3 marks)

KCSE 2026 FINAL PREDICTIONS

CONFIDENTIAL EXAM 8

451/1

COMPUTER STUDIES

PAPER 1**TIME: 2½ HOURS**

NAME.....

SCHOOL..... SIGN.....

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

*Kenya Certificate of Secondary Education.***Instruction to candidates**

- (a) Write your name and index number in the spaces provided above
- (b) This paper consists of **two** sections **A** and **B**
- (c) Answer **ALL** questions in section **A**
- (d) Answer question 16 and any other **THREE** questions from section **B**

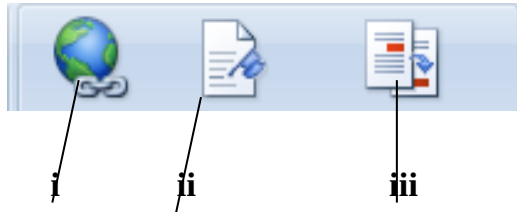
For Examiner's Use Only

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

SECTION A

Answer ALL questions

1. Name the parts labelled in the diagram below of a page layout properties [3 marks]



2. Explain briefly how an uninterruptible power supply (UPS) may help to protect a computer system and its data. [1 mark]
3. How is data verification different from data validation? [1 mark]
Give one example of data validation technique [1 mark]
Give one example of data verification technique [1 mark]
4. What kind of program is normally contained in a ROM chip and Explain briefly the main purpose of such a program. [2 marks]
5. Distinguish between system software and application software. [2 mark]
6. Give the similarities between optical mark readers and optical character readers. [2 marks]
7. In word processing, distinguish between text insertion and overtyping. [2 marks]
8. Explain, using examples where appropriate, the meaning of these computer terms.
(i) interrupt [2 Marks]
(ii) buffer [2 Marks]
9. Explain the following spreadsheet concepts:
(i) Automatic Recalculation. [1 mark]
(ii) What if analysis [1 mark]
10. Explain briefly why the advancement of computer technology has caused environmental hazards. [2 marks]
(i) What is telecommuting? [1 mark]
(ii) State four benefits of telecommuting. [2 marks]
(ii) How is e-commerce different from e-business? [1 mark]
11. (i) What is a coprocessor? [1 mark]
(ii) How does parallel processing work? [1 mark]
(iii) What is pipelining? [1 mark]
12. (i) What is a driver program? [1 mark]
13. (ii). Give **one** example of hardware device that may serve more than one purpose (e.g., input and output). [2 marks]
14. (i) How is a patent different from a trademark? [2 marks]
(ii) What is the difference between unauthorized access and unauthorized use? [2 marks]
15. (i) What is a workstation? [$\frac{1}{2}$ mark]
(ii) What is a server? [$\frac{1}{2}$ mark]

SECTION B

Answer question 16 (compulsory) and any other three questions from this section

16. (a) Explain the three control structures in programming [3 Marks]
 (b) State and describe three types of error can occur in programming [3 Marks]
 (c)(i) State **two** differences between a compiler and an interpreter [2 marks]
 (ii) Give **one** advantage of compilers over interpreters [1 mark]
 (iii) Give **one** advantage of interpreters over compilers [1 mark]
 (d) Draw the corresponding flowchart for the pseudo code below. [4 marks]

Assign 0 to A,
 Repeat adding 1 to A,
 Until A is greater than or equal to 5,
 Print A.

17. (a) How is peer-to-peer network different from client/server network, considering how programs, data and information are stored? [2 marks]
 (b) (i) Give **three** advantages of optical fibers over twisted-pair wires and coaxial cables. [3 marks]
 (ii) Suggest **two** disadvantages of optical fibers. [1 mark]
 (c) (i) Compare asynchronous and synchronous transmission. [1 mark]

asynchronous	synchronous

- (ii) Give one disadvantage of the c(i) above [1 mark]

asynchronous	synchronous

- (d) (i) Compare the following Ring ,star and bus network topologies. [1 ½ marks]

Bus NetWork	Ring NetWork	Star Network

- (ii) Give one **disadvantage** of each [1 ½ marks]

Bus NetWork	Ring NetWork	Star Network

- (iii) Draw a diagram to represent the ring ,star and bus topologies [1 ½ marks]

Bus NetWork	Ring NetWork	Star Network

- (e) (i) Explain the term upload [½ mark]
 (ii) If a 56K modem is operating at full speed, how long does it take to download a 1-MB file? [2 marks]

18. (a).Describe the role of the systems analyst. [2 marks]
(b).Describe 2 techniques used by the systems analyst in requirements **specification**. [2 marks]
(b).In the software development process, what happens at the analysis stage? [1 Mark]
(c) Describe fully what is meant by the term *top-down design*? [3 Marks]
(d) The process of developing such software is an iterative process. What does *iterative* mean? [1 Mark]
(e)(i) What are CASE tools? [1 Mark]
(ii)What is the purpose of CASE tools? [1 Mark]
(iii) What does *CASE* stand for? [1 Mark]
(f) Identify ant two activities within the design stage of the software development process [3 Marks]
- 19 (a).Describe four functions of a single user operating system. [4 Marks]
(b) Explain the need for an operating system to have a command language interpreter. [1 Mark]
(c) Give 4 examples of the many processes which can be initiated by a user and which are then carried out by the operating system. [4 Marks]
(d) What happens if a command entered by the user is not recognized by the operating system? [1 Mark]
(e)Describe an advantage and a disadvantage to storing the operating system in RAM rather than in ROM? [2 Marks]
(g) Describe three features that a **network operating system** must have that a single user operating system does not need. [3 Marks]
20. (a) Explain two reasons why computers use the binary system? [2 Marks]
(b)What is meant by the term *word* in the phrase *16-bit word computer*? [1 Mark]
(c) What is the decimal value of the largest integer that can be represented by a byte in a computer which deals only with positive numbers? [1 Mark]
(d)What does the acronym ASCII stand for and what is ASCII? [2 Marks]
(e) Complete the following table and note that no marks will be awarded for answers with missing or unclear working. [6 Marks]

BIN	DEC	HEX
	45	
		B6
11001		

THIS IS THE LAST PRINTED PAGE

KCSE 2026 FINAL PREDICTIONS

CONFIDENTIAL EXAM 8

451/2

COMPUTER STUDIES

PAPER 2**TIME: 2½ HOURS**

NAME.....

SCHOOL..... SIGN.....

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

Kenya Certificate of Secondary Education.

INSTRUCTIONS TO CANDIDATES

- 1) Indicate your name and index number at the right hand corner of each printout
- 2) Write your name and index number on the CD/removable storage medium provided
- 3) Write the name and version of the software used for each question attempted in the answer sheet provided
- 4) Answer all the questions, All questions carry equal marks
- 5) This paper consists of 6 printed pages. **Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.**
- 6) Passwords should not be used while saving in the CD/removable storage Medium
- 7) Marked printout of the answers on the sheet
- 8) Hand in all the printouts and the CD/removable storage medium used

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QUESTION	MAX SCORE	SCORE
ONE	50	
TWO	50	
TOTAL	100	

1. KenTelcom is a company that engages in the sales of the following Mobile service providers: Faiba, Gateway, Vodafone and SAF. The company uses sales representatives who operate at various regions in Nairobi town. Each sales representative presents monthly sales to the manager (Values are in Ksh).

	A	B	C	D	E	F
	Mobile _ Accessories Sales LTD					
		Product type				
	Sales Rep.	Faiba	Gateway	Vodafone	SAF	Total Sales
	James	24000	37500	39500	49500	
	Peter	15000	26500	21500	25500	
	Beryl	5500	14800	3500	16500	
	Melanie	7000	15500	14500	64500	
	Mariana	11000	69000	2200	64500	
	Maggi	33500	12000	14500	23500	
	Valentine	15500	80000	17200	23500	

- (a) Using spreadsheet package,
- Enter the information given in the table above into a worksheet. Save workbook as **KenTelcomREPS** and rename sheet 1 as **Sales**. (20 marks)
 - Validate all the cells in the Product Type columns to allow entry of numeric data from 0 to 80,000 **only**. A message, Invalid data!: should be displayed whenever a cell is typed with non-compliant data.(3 marks)
- (b) Using formulae, determine the;
- Total sales for each Sales representative (2 marks)
 - Product type Total Sales for each provider. (2 marks)
- (c) Each sales person earns Bonus points for the sales of each product type based on the following criteria.
- 1 point for every sh. 50 for Faiba,
 - 2 points for every sh. 60 for Gateway,
 - 3 point for every sh. 50 for Vodafone,
 - 2 point for every sh. 60 for SAF.

(d) Insert a column **Bonus Points** and compute the points of each sales person (5 marks)

(e) Insert a blank column **Awards** and based on the Bonus points earned by each sales representative, use a function to display the remarks on Awards as follows: (5 marks)

Total Sales**Awards**

2,500 and above

Cash

More than 1,000 and less than 2,500

Vouchers

1,000 and below

try again

(f) Format the figures in worksheet as follows: (3marks)

b) Title and subtitle:

(a) Double underline

(b) Font type – Algerian

(c) Font size

(g) Rotate, all the Product Type heading labels in the worksheet to -90°. (1 mark)

(h) Generate a column chart to represent the Total sales for each sales representative. Label your chart accordingly and place it in a new worksheet renamed as CHART. (7marks)

(i) Print Sales and CHART (2marks)

2. The table below shows list of students admitted to Mangu High School under different sponsors.

(a) Open a database program and create a database named **MHS**. (1mark)

(b) Create three tables named **Students**, **Sponsor** and **Fees**. (3marks)

(c) Using database file created in (a) above use the following field properties. (6marks)

Student Table

Field name	Data types and properties
School-Code	Default value = 427
AdmNo	Text (Size = 4, Required = Yes)
Student Name	Text (Size = 16)
Date of Birth	Date and time (Size = 10)
Amount paid	Text (Size = 4, Required = Yes)
SponsorID	LookUp -sponsor table
BankID	Text

Sponsor_Table

Field name	Data types and properties
SponsorID	Text (Size = 4, Required = Yes)
Sponsor Name	Text (Size = 16)

Amount_Table

Field name	Data types and properties
BankID	Text
BankName	Text (Size = 10)
Amount Per Student	Number (Size = 8, Decimal Place = 2)
Mode of payment	Text (Size = 12)

- (i) Create the relationship between the tables. **(2marks)**
- (ii) Enforce referential integrity between the tables. **(1mark)**
- (iii) Create the three forms **StudentForm**, **SponsorForm** and **AmountForm**. **(3marks)**
- (iv) Enter the following data in their respective tables using the respective **forms**. **(8marks)**

Table 1: Sponsor Table

SponsorID	Sponsor Name
S1	Wings
S2	Majani
S3	Elimu

Table 2: Student Table

Sch-Code	AdmNo	SponsorID	StudName	BankID	DateOfBirth
427	444	S1	Lilian Mwende	100	12/03/2000
427	443	S3	Ruth Akinyi	200	23/01/1998
427	445	S2	Frida Omondi	100	11/07/2002
427	442	S1	Bianca Godana	300	12/05/2005
427	410	S3	Christine Awuor	300	28/05/1999
427	413	S2	Baraka kalala	200	30/09/1998
427	449	S1	Rael Mokaya	100	18/02/2005
427	411	S3	Slivia Odanga	100	17/04/2001
427	412	S2	Jane Kawaswa	200	19/06/2004
427	415	S2	Jack Jake	100	22/03/2003

Table 3: Amount Table

BankID	BankName	Amount Per Student	Mode of payment
100	COOP	550,000	EFT
200	KCB	120,000	M-banking
300	EQUITY	420,000	Cheque

(d) Create a query to display the fields:

(i) AdmNo, Sponsor name, age and Students whose first name start with letter “**B**” and whose payment Bank is “**COOP**” Save query as **B-query**. **(5marks)**

(ii) StdName, Sponsor name, Mode of payment and Amount per student. Calculate the total amount received. Save query as **AMount-query**. **(5marks)**

(iii) Create **Amountreport** from **Amount query** display all the records grouped by mode of payment and find the average per mode of payment **(4 marks)**

(e) Create a bar chart to display students and their respective amount received. Save chart as **S-chart**. **(2 marks)**

(f) Create **S-report** to display the following. **5marks)**

Report title Sponsorship Report 2022

AdNo, Student Name, Sponsor Name, Bank Name, Bank ID and Amount

(g) Print the following: **(4marks)**

(i) The Student table

(ii) The B- query

(iii) The chart

(iv) The S-report

KCSE 2026 FINAL PREDICTIONS

CONFIDENTIAL EXAM 9

451/1

COMPUTER STUDIES

PAPER 1**TIME: 2½ HOURS**

NAME.....

SCHOOL..... SIGN.....

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

Kenya Certificate of Secondary Education.

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.

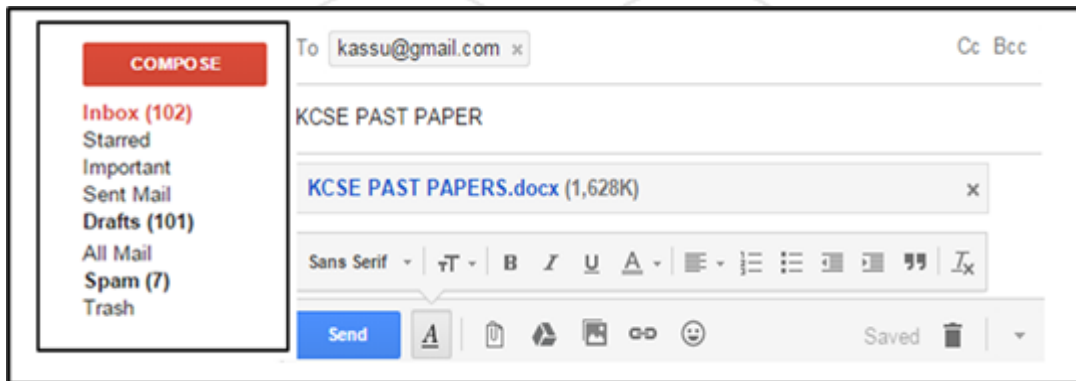
For Examiners Use Only

Section	Questions	Candidates Score
A	1-15	
B	16	
	17	
	18	
	19	
	20	
	TOTAL SCORE	

SECTION A

Answer ALL questions

1. Give **TWO** reasons why Powder type fire extinguishers are not recommended to be used in a computer laboratory. (2 Marks)
2. State the purpose of each of the following memories in a computer system. (2 marks)
ROM
RAM
3. State two factors that one would consider when selecting data entry method in computing. (2 Marks)
4. Describe the following types of printers and state one application area of each. (3Marks)
(a) Dot matrix
(b) Thermal printer.
5. Differentiate between in-house software and freeware. (2 Marks)
6. Give two importance of feedback mechanism in systems (2 Marks)
7. With an aid of a diagram, explain one-to-one database relationship. (2 Marks)
8. ISABOKE Secondary School intends to set up internet connection in their school for e-learning purposes. Advise the school management on four internet connectivity requirements that is required for them to be able to access internet. (2 Marks)
9. The figure below shows an extract of an e-mail application.



What is meant by each of the following terms: (3 Marks)

(a) Trash

(b) Spam

(c) Inbox

10. State two ways in which users in an organization can be a security threat to data in an information system. (2 Marks)

11. State three negative impact of information communication technology on the Environment. (3 Marks)

12. In a computer based information system, state the purpose of the following files and give **one** example where such a file may be required in a school. **(4 marks)**

- a. **Report file.**
- b. **Sort file.**

13. State three responsibilities of a Database administrator in an organization. **(3 Marks)**

14. With an example for each, describe how computers are used in the following areas of education; **(3 Marks)**

- a. **Simulation**
- b. **Tutorial**

15.a. Dan a computer student noticed that every time a person enters the computer lab the computer screen flickers. Identify three reasons why the monitor might be flickering **(3 Marks)**

b. State two ways in which the problem can be solved **(2 Marks)**

SECTION B (60 Marks)

*Answer **question 16** and any other **three** questions*

16.a. State two advantages and two disadvantages of high level programming language **2 Marks**

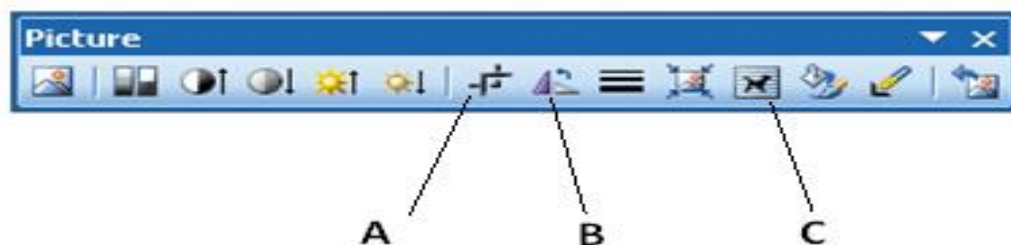
b. State three situations when REPEAT .. UNTIL structure can be used in writing a program **(3 Marks)**

c. The roots of the equation $ax^2 + bx + c = 0$ are given by the formula

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

- i. Write a pseudocode for the above program **(5 Marks)**
- ii. Draw a flow chart for the above pseudocode **(5 Marks)**

17. (a) (i) The figure below shows a picture tool bar



Name and state the functions of the features marked **A, B and C**:

- (i) **A** **(1 Mark)**
- (ii) **B** **(1 Mark)**
- (iii) **C** **(1 Mark)**

- (b) State the importance of Column breaks as used in word processor. **(1 Mark)**
- (c) Change case is where a user applies so that the text can have some contrast in size. Write the word Digital SIGNAL **(2 Marks)**
- (i) Title case
- (ii) Toggle case
- (d) Define the following terms as used in charts. **(2 Marks)**
- (i) Legend
- (ii) Data range
- (e) The table below shows how a kiosk owner uses a spread sheet to keep records in a shop.

	A	B	C	D	E	F
1	ITEM NAME	NUMBER OF ITEMS	UNIT COST	TOTAL BUYING PRICE	TOTAL SELLING PRICE	PROFIT
2	Blue band	150	120			3600
3	Toss	135	50			1350
4	Cow boy	120	120			2880
5	Panga soap	118	50			1180

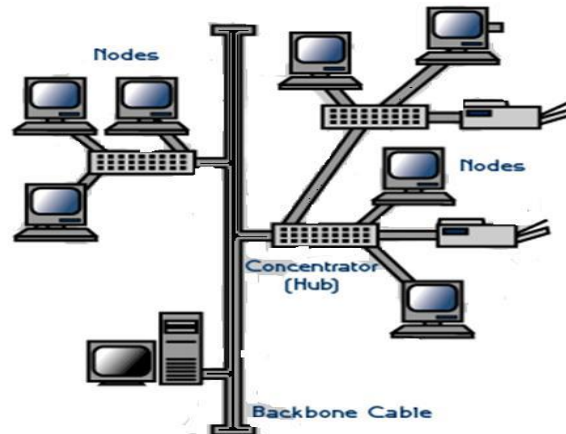
- (I) Write a **function** to calculate the total buying price. **(2 Marks)**
- (II) Write a **formula** to calculate the Profit. **(2 Marks)**
- (III) The total buying prices of all items was increased by 12% and the value 12% is placed in cell B6. Using cell addresses with absolute referencing, write a formula to calculate the Total Selling Price in cell E2. **(2 Marks)**
- (IV) State the output of the expression =SUMIF(F2:F5,"<1 500")would return. **(1 Mark)**
- 18.a. Describe the term prefixing an extra sign bit as used in data representation. **(2 Marks)**
- b. Convert each of the following numbers system.
- (i) 0.78125_{10} to binary **(2 Marks)**
- (ii) $3A9_{16}$ to Octal **(2 Marks)**
- c. Perform the following binary operation. **(3 Marks)**
- $1010.11 + 111.10 - 101.11$

- d. Using one's complement, perform the following binary arithmetic leaving the answer decimal notation. $17_{10} - 45_{10}$ (6 Marks)

19.a. Distinguish between the following terms as used in data communication (6 Marks)

- iii. Guided transmission medium and unguided transmission media
- iv. Multiplexing and de-multiplexing
- v. Logical and physical Topology

b. Below is a diagram of a network topology.



- iii. Name the above topology (1 Mark)
- iv. State two advantages and two disadvantages of using the topology named above (4 Marks)
- c. List and explain the two data transmission techniques (4 Marks)
- 20.a. Distinguish between a computer drive and computer driver (2 Marks)
- b. State any four factors to consider when selecting an operating system (4 Marks)
- c. Explain any four factors that dictates how the operating system organizes data in a computer (4 Marks)
- d. Define the term file in relation to the operating system (1 Mark)
- e. The operating system stores details of a file for easy identification and retrieval of files. Explain any four file details the operating system uses to search and identify a file (4 Marks)
- f. Distinguish between a menu driven operating system and graphical user interface operating system (2 Marks)

KCSE 2026 FINAL PREDICTIONS**CONFIDENTIAL EXAM 9**

451/2

COMPUTER STUDIES**PAPER 2****TIME: 2½ HOURS**

NAME.....

SCHOOL..... SIGN.....

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

*Kenya Certificate of Secondary Education.***INSTRUCTIONS TO CANDIDATES**

- a) Indicate your name and index number at the top right hand corner of each printout
- b) Write your name and index number on the CD/Removable storage media provided
- c) Write the name and version of software used for each question attempted in the answer sheet provided
- d) Answer all questions
- e) All questions carry equal marks
- f) Passwords should not be used while saving in the CD/Removable storage medium
- g) All answers must be saved in the CD/Removable storage medium
- h) Make printout of the answers on the answer sheet
- i) Arrange your printout and ties/staple them together
- j) Hand in all printouts and the CD/Removable storage medium used
- k) Candidates should answer the questions in English
- l) ALL Data for currency data type should be formatted to Kenya Shillings
- m) All the system Date and Time should be set to correct Kenya time and Date settings

QUESTION ONE

a) The data below shows a spreadsheet for loan applicants from a youth fund from a certain county.

MEMBER NO	NAME	DATE OF BIRTH	DATE OF APPLICATION	GENDER	AGE	AMOUNT APPLIED
A001	ABC	1/3/1992	1/1/2016	M		Ksh 200,000.00
B001	CDE	2/6/1999	3/1/2016	F		Ksh 600,000.00
C008	FGH	5/6/1992	3/1/2016	M		Ksh 400,000.00
K001	JKL	2/7/1990	7/1/2016	F		Ksh 700,000.00
S007	MNO	2/9/1960	7/1/2016	M		Ksh 600,000.00
Z006	KRS	4/8/1992	2/2/2016	M		Ksh 500,000.00
A008	TUV	4/8/1960	3/2/2016	M		Ksh 700,000.00
B005	CED	2/6/1995	5/2/2016	F		Ksh 600,000.00
C011	HGF	5/6/1990	10/2/2016	M		Ksh 400,000.00
K012	LKJ	2/7/1970	6/1/2016	M		Ksh 700,000.00
S019	NOM	2/9/1991	4/6/2016	M		Ksh 600,000.00

Type the data as shown in the spreadsheet above name the worksheet as Original save the workbook as application. **(14 Marks)**

(b) Copy the worksheet named original above to another worksheet in the same workbook and name it as Evaluation.

(i) Fill the column for the (AGE) which is the difference between DATE OF APPLICATION and DATE OF BIRTH in years to the nearest whole number. **(6 Marks)**

(ii) Create a validation in the DATE OF APPLICATION such that it should be after DATE OF BIRTH. **(2 Marks)**

(iii) Format all columns having currency Data type to Kenya shilling. **(2 Marks)**

(iv) Create the columns COMMENT and AMT AWARDED.

The COMMENT is based on the following

- If the gender is male and the age by the data of applicable is greater than 30 years the COMMENT is INELIGIBLE otherwise ELIGIBLE.
- Amount awarded if a person is eligible if 80% of the amount applied.

(v) Fill in the two columns for the AMOUNT AWARDED and COMMENT using the formula. If an applicant is INELIGIBLE the amount awarded is left blank. **(10 Marks)**

(c) Copy the worksheet named Evaluation above to another worksheet in the same workbook and name it as final.

(i) Filter out data in the final in the final worksheet leaving out those who have been awarded a loan. **(2 Marks)**

(ii) Create a table showing the total amount awarded to all Males and total awarded to Females and total for both male and females. In the sample table below fill in the values using conditional if statement . **(6 Marks)**

	AMOUNT(Ksh)
MALE	
FEMALE	
Total	

(iii) Draw a pie chart representing the total amount for males awarded and females awarded **(2 Marks)**

(d) Print the following: **(4 Marks)**

(i) Original worksheet

(ii) Evaluate worksheet

(iii) Final worksheet

(iv) The pie chart

QUESTION TWO

The table below an extract of a manual data structure system used by a librarian of a particular school

ADMNO	S_NAME	CLASS	BOOK_NO	TITLE	BORROW TYPE	DATE_BORROWED	DATE_RETURNED
123	MIKE	1A	B001	COMPUTER STUDIES BK 1	SHORT	2-1-2016	12-1-2016
456	JOHN	1B	A002	COMPREHENSIVE ENG BK 1	LONG	1-2-2016	17-1-2016
789	ADREW	1C	B003	KIE MATHEMATICS BK 1	LONG	1-3-2016	14-3-2016

987	JAMES	2A	D004	LONGHORN GEOGRAPHY BK2	SHORT	1-4-2016	8-4-2016
654	JACOB	2B	K005	KISWAHILI SHAIRI BK2	SHORT	1-5-2016	9-5-2016
321	NANCY	2C	B006	MATHEMATIC S BK2	SHORT	2-3-2016	10-3-2016
879	MARY	3A	C005	HISTORY BK3	LONG	2-4-2016	17-4-2016
564	MERCY	3B	K009	FOUNDATION CHEMISTRY BK 1	LONG	2-5-2016	14-5-2016
213	PETER	3C	H001	KISWAHILI LUGHA BK 2	LONG	1-4-2016	18-4-2016
123	MIKE	1A	K005	KISWAHILI SHAIRI BK2	SHORT	1-5-2016	19-5-2016
456	JOHN	1B	B006	MATHEMATIC S BK2	SHORT	1-4-2016	5-4-2016
789	ADREW	1C	C005	HISTORY BK3	SHORT	1-4-2016	7-4-2016
987	JAMES	2A	K009	FOUNDATION CHEMISTRY BK 1	LONG	1-5-2016	8-5-2016
654	JACOB	2B	H001	KISWAHILI LUGHA BK 2	LONG	1-4-2016	22-4-2016

The library charges 2 shillings per every book borrowed per day, if the book is not returned in time it attracts a penalty of 5 Shilling per day. The short loan is a maximum of seven days while the long loan is 14 days

a) From the table above create a database called library.

(i) Create THREE tables Student(ADMNO as primary key) and Book(BOOK_NO as primary key) and Borrow(Borrow_id as primary key which is auto number). **(6 Marks)**

(ii) Create relationship between the three tables **(2 Marks)**

(iii) Fill in the data in the three tables **(15 Marks)**

b) Create a the following queries

(i) Query named chargesqry for all charges for books on short loan the query should have the following fields(ADMNO,S_NAME,BOOK_NO,TITLE,BORROW

TYPE,DATE_BORROWED,DATE_RETURNED,NO_OF_DAYS_BORROWED,NORMAL_CHARGE,PENALTY_CHARGE,TOTAL_CHARGE)(10 Marks)

(ii) Query named shortchargesqry for all charges for books on short loan the query should have the following fields(ADMNO,S_NAME,BOOK_NO,TITLE,BORROW TYPE,DATE_BORROWED,DATE_RETURNED,NO_OF_DAYS_BORROWED,TOTAL_CHARGE) (2 Marks)

(iii) Query named longchargesqry for all charges for books on long loan the query should have the following fields(ADMNO,S_NAME,BOOK_NO,TITLE,BORROW TYPE,DATE_BORROWED,DATE_RETURNED,NO_OF_DAYS_BORROWED,TOTAL_CHARGE) (2 Marks)

(iv) Create a report showing the total amount which the library has earned between any two dates on short loan save it as shortbetweendatesrpt format the currency data type to Kenya shillings (6 Marks)

(v) Create a report showing the total charged to a student for both long and short loan borrowing in one report save it as studentchrgprt format the currency data type to Kenya shillings (4 Marks)

c) Print the following (4 Marks)

(i) All tables with data

(ii) Both query with data

(iii) Shortbetweendatesrpt

(iv) studentchrgprt

KCSE 2026 FINAL PREDICTIONS

CONFIDENTIAL EXAM 10

451/1

COMPUTER STUDIES

PAPER 1**TIME: 2½ HOURS**

NAME.....

SCHOOL..... SIGN.....

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

Kenya Certificate of Secondary Education.

INSTRUCTION TO CANDIDATES

- a) Write your name and index number in the space provided above.
- 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 **all** the questions in section A.
- e) Answer question 16 and any other **three** questions from section B.

For Examiner's Use Only

Section	Question Number	Candidate's Score
A	1-15	
B	16	
	17	
	18	
	19	
	20	
Total		

Section A (40 Marks)

Answer all question in this section in the spaces provided

1. Molly a secretary at Kassu Secondary School carries out her daily duties using computers and suffers wrist strain. State two ways she would reduce wrist strain. **(2 mark)**
2. There are two booting processes of the computer. Explain the cold booting process **(2 Marks)**
3. The manager of KASSU Co. Ltd. wishes to purchase an output device for the company. State three factors to consider when selecting the output device to purchase. **(2 Marks)**
4. State **two** disadvantages of entering data using touch sensitive screens in tablet computers. **(2 marks)**
5. Due to the rapid change in technology, the world is slowly moving from the magnetic and optical storage devices to solid state storage devices.
 - a. Define the term “solid state storage device” **(1 Mark)**
 - b. State any two advantages of solid state storage devices **(2 Marks)**
6. Differentiate between HDMI and firewire interface cables **(2 Marks)**
7. Lamura games teacher at Tatu secondary school wants to invites several schools for Basketball tournament. She was advised to use mail merging technique to create invitation letters for the respective schools identified. State three benefits of this technique. **(3 Marks)**
8. In a relational database, it is important to identify and create relationships between the database objects. Mentioning the type of relationship, state circumstances under which each relationship is formed. **(3 Marks)**
9. Suggest any four application areas in which you would expect a supermarket retail manager to use the internet. **(4 Marks)**
10. State the stages of system development life cycle in which each of the following activities that place. **(3 Marks)**
 - (a) Staff training
 - (b) Error correction
 - (c) Cost effectiveness
11. The use of ICT has affected every aspect of human life. State one disadvantage and two advantages of ICT on physical fitness in the society **(3 Marks)**
12. The Internet is a massive network of networks that connects millions of computers together globally. Explain two ways through which an individual can access the **internet**. **(2 Marks)**
13. State two ways in which ICT can be used to register a citizen for *huduma* number **(2 Marks)**

14. Using the twos complement & 8 bit binary notation, perform the calculation $15_{10} - 41_8$ leaving your answer in decimal number. (6 Marks)

15. Distinguish between a special purpose computer and a dedicated computer. (2 Marks)

SECTION B (60 MARKS)

Answer question 16 and any other three from this section in the spaces provided.

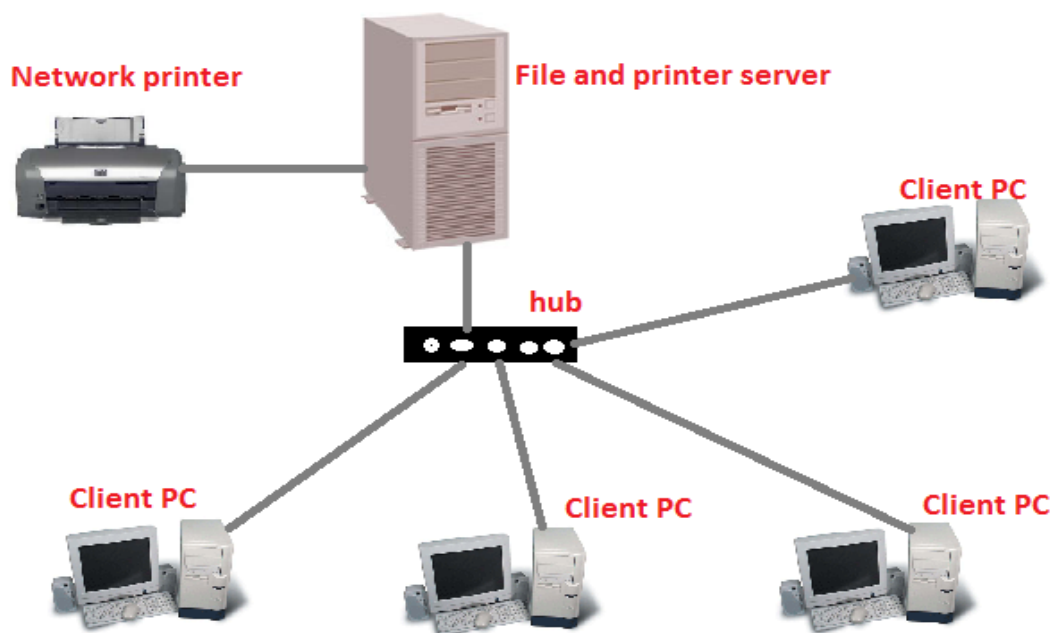
16. Below is a pseudocode for a program that is meant to be used for calculating the sum and average of all even numbers between 50 and 100 and display results.

1. `set sum = 0`
2. `for num = 0 to 100 do`
3. `num = num + 1`
4. `sum = num + sum`
5. `average = sum/count`
6. `end`
7. `print sum, average`

a. The pseudocode has four logical errors, identify and correct the errors. (8 Marks)

b. Draw a flowchart for the corrected version of the pseudocode in (a) above. (7 Marks)

17. Study the diagram below of a school network and use it to answer the questions that follow.



a. Identify the network represented in the diagram (1 Mark)

- b. State any two advantages and two disadvantages of the above network (4 Marks)
- c. Distinguish between multiplexing and demultiplexing as used in data transmission. (2 Marks)
- d. State the importance of multiplexing during data transmission (1 Marks)
- e. Distinguish between packet switching and circuit switching of packets during transmission (2 Marks)
- f. Data is constantly under threat from everyone handling it and the larger society. Identify any two physical threats to data by the employees of the organization to its information system (2 Marks)
- g. Mark, an employee of the institution used his computer to access his boss's computer to get some classified information and gave it to one of the clients at a fee.
- i. State the type of crime committed by Mark (1 Mark)
- ii. State two possible ways of protecting the data against the crime committed by Mark (2 Marks)
18. (a) Explain the difference between *freeware* and *open source softwares*. (4 marks)
- (b) Describe how operating systems handle the following in a computer system.
- i. Errors (2 marks)
- ii. Interrupt (2 marks)
- (c).
- i. State the meaning of the term fragmentation as used in disk management. (1 mark)
- ii. State two effects of fragmentation in a computer system. (2 marks)
- (d). Explain the purpose of the following in a computer. (2 marks)
- i. Cache memory
- ii. Output buffer
- (e). State **two** characteristics of Random Access memory. (2 marks)
19. a. Data collection is a process of gathering data from all the relevant sources. List the data collection stages. (4 Marks)
- b. Explain three advantages of time sharing as a data processing mode. (3 Marks)
- c. Differentiate between a webmaster and a web developer. (2 Marks)
- d. Differentiate between automatic recalculation and what if analysis as used in spread sheet programs. (2 Marks)
- e. With aid of an example in each case, describe each of the following cell referencing methods.
- i) Range reference (2 Marks)
- ii) Referencing using labels (2 Marks)
- 20.

- a. There are many systems developed some of which contrast each other. Distinguish between a conceptual and physical system. **(2 Marks)**
- b. Every organization requires an information system.
- i. Define an information system **(1 Mark)**
- ii. Describe any three reasons why it is necessary for an organization to change its existing information system **(3 Marks)**
- c. Testing systems after development is a very critical process in systems development. State any four test conditions to be covered for effective testing of the system. **(4 Marks)**
- d. With examples for each, Distinguish between a page layout based DTP software and graphical based DTP software **(3 Marks)**
- e. State two reasons why it is important to implement the use computers in the monitoring and control processes of industrial products **(2 Marks)**

KCSE 2026 FINAL PREDICTIONS**CONFIDENTIAL EXAM 10**

451/2

COMPUTER STUDIES**PAPER 2****TIME: 2½ HOURS**

NAME.....

SCHOOL..... SIGN.....

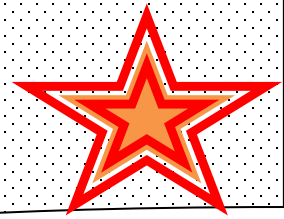
INDEX NO..... ADM NO.....

*Kenya Certificate of Secondary Education.***INSTRUCTIONS TO CANDIDATES**

1. Type your name and admission 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.

1. (a) (i) Create a **folder** and name it as the **last three digits** of your index number. (1 mark)
 (ii) Create the document as it appears and save as **OS_RAW**". (17 Marks)

TYPES OF OPERATING SYSTEMS



When identifying an operating system, it is important to consider certain aspects of classification in order to group them correctly. Therefore operating systems can be classified according to:

1. *Number of tasks*
2. *Number of users*
3. *User interface*

CLASSIFICATION ACCORDING TO NUMBER OF TASKS	
SINGLE TASKING OPERATING SYSTEM	MULTITASKING OPERATING SYSTEM
allows the computer to perform only one task at a time	allows a single CPU to perform several operations at the same time.
the processing task taking place must first finish executing before another task is assigned the processor	the processor switches from one task to another as directed by the operating system at a very high rate

CLASSIFICATION ACCORDING TO INTERFACE

INTERFACE refers to the method of interaction between the user and the computer and interface is seen as what lies between the user and the computer that brings them together in an understandable form by the user, hence making the use of the computer possible.

The underlying principle in operating system as design is to make the interface as easy as possible.

The consideration of operating systems mainly depends on the interface, that is user friendly (ease of using) it is, therefore the more user friendly the interface is, the more easy to operate the computer.

COMMAND-LINE BASED OPERATING SYSTEMS

Command-line user interface operating systems was used by the first operating systems which only provided the user with a black screen to type a command at the prompt. The computer reads the typed command from the command line and executes it. For the command –line operating system to be more user friendly, English like words- descriptive verbs ie print, copy etc and unique abbreviations ie DEL, REN, CHKDSK etc were used as commands.

Command-line operating systems are not user friendly because;

- It is difficult to remember all the commands
- It cannot process complex graphics
- It cannot support the emerging hardware and software technologies.

- (a) Set the page as follows: (4 marks)
- (i) Paper size: A4
 - (ii) Measurements: inches.
 - (iii) Set margins: 1.2" all round
 - (iv) Font type: Times Roman
- (b) Spell check the document. (1 marks)
- (c) Save the document above as **OS_FORMAT**, in the folder created and apply the following format. (1 mark)
- (d) (i) Apply hanging Indent the first paragraph starting with “***When identifying an operating system***” By 0.8”. (1 mark)
- (ii) Convert all the text from the paragraph starting with “***The underlying principle***” into three columns of the same width and height and a line between. (2 marks)
- (ii) Change the line spacing for the entire paragraph starting with “Command-line user interface” to 1.5. (1 mark)
- (e) Format the “*Star*” as follows: (2 marks)
- Height: 0.74”
 - width: 0.92”
- (f) Apply the following format to the document;
- (i) Insert water mark with the text “*Operating Systems*” on the document of font size 20 and running diagonally from left to right. Apply red colour. (4 marks)
 - (ii) Insert page numbering at the bottom centre of every page *x of y*. (1 mark)
 - (iii) Insert the text “name and index number ” as the header align to the right. (2 marks)
 - (iv) Replace the word **REN** with the word **RENAME** (1 Mark)
 - (v) Insert an endnote to explain the meaning of the term CHKDSK in the document. (2 marks)
 - (vi) Create page border made of dotted line. (2 marks)
 - (g) Insert a break at the end of the document created such that the new section on a new page. (1 mark)

- (h) (I) Table 1 below shows various operating system market dominance from the year 2017 to 2019 in percentage. Insert a bar chart in the new section to represent the information shown in the following table. **(3 marks)**

OS Name	Year 2019	Year 2018	Year 2017
Windows	75.47	71.4	69.72
MacOS X	12.33	9.67	8.13
Linux	1.67	1.51	1.42
Chrome OS	1.11	1.01	0.91
Others	9.42	8.82	8.15

Table 1

- (II) Apply a grey background to the area created in (ii) above. **(1 mark)**
 (III) Insert the caption “*Operating System Market Dominance 2017-2019*”. **(1 mark)**
 (VI) Change the orientation of the page containing the chart to landscape. **(1 mark)**
 (VII) Save the document in the folder created and print on both sides of the paper. **(1 mark)**

2. The table below shows extract orders made by several school in Kopiyo Carpentry Workshop.

School Number	Furniture Number	School Name	School Category	Furniture Name	Furniture Material	Carpenter Name	Carpenter Number	Number Ordered
104	11-01	Vision	Mixed	Desk	Mahogany	Alpha	CA-1	12
106	11-02	karatasi	Boys	Chair	Elgon teak	Baya	CA-2	13
120	12-01	Dove	Girls	Table	Elgon teak	Maria	CA-3	16
189	12-02	Manar	Mixed	Single bed	Mahogany	Alpha	CA-1	12
199	13-01	Pepeo	Boys	Office desk	Cedar	Baya	CA-2	13
200	11-01	Rehema	Girls	Desk	Mahogany	Maria	CA-3	16
210	11-02	Kasuku	Mixed	Chair	Metallic	Alpha	CA-1	12
222	12-01	Kapema	Mixed	Table	Cedar	Baya	CA-2	13
234	13-01	Ravel	Boys	Office desk	Mahogany	Maria	CA-3	16
244	13-02	Eagle	Girls	Double bed	Metallic	Maria	CA-3	16
256	11-02	Goose	Boys	Chair	Metallic	Tom	CA-4	20
270	13-02	Hornbill	Girls	Double bed	Metallic	Tom	CA-4	22

Table 2

(iii) Using a database application package, create a database file named **Kopiyo Carpentry**.

(1 mark)

(iv) Create three tables, one to store school details, furniture details and carpenter's details. Name the tables as **School_Details** and **Furniture_Details** and **Carpenters_Details**.

(3 marks)

(v) Assign an appropriate primary key to each table.

(2 marks)

(vi) Create a relationship between the three tables.

(2 marks)

(v) Enforce referential integrity

(1 mark)

(b) (i) Create data entry form for each table.

(2 marks)

(ii) Use the forms to enter the respective the data in table 1 above.

(15 marks)

(c) Modify the furniture table so as to capture the purchase price of each item as shown below.

(3 marks)

Furniture Number	Purchase Price
11-01	3800
11-02	2000
12-01	2600
12-02	4800
13-01	4000
13-02	4600

Table 3

(d) (i) Create a query named **B_Query** to display furniture number, school name, school category, furniture material, carpenter and number ordered.

(3 marks)

(ii) Create a query named **Order_Query** to display school names, furniture name, material, purchase price and number of ordered items. Show records whose school name start with letter "K" and ordered chairs.

(5 marks)

(e) Create a report named **S_Report** to display furniture number, school name, furniture name, purchase price, number of items ordered and total income collected.

(10 marks)

• The records in the report should be grouped by furniture material.

• Show the number of items per group.

• Landscape orientation

• Title the report "Kopiyo Carpentry Workshop Services".

(f) Print the following:

(3 marks)

(i) Tables: **School_Details** and **Furniture_Details**

(iii) Queries : **B_Query** and **Order_Query**

(iv) Report: **S_Report**

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SUCCESS

POLITE NOTE TO 2026 KCSE CANDIDATES

In the event that any of these revision questions closely match or appear in the upcoming national examinations, please stay composed. Do not panic, and approach your papers with confidence.

BEST OF LUCK IN YOUR EXAMS!

REGARDS

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