KCSE COMPUTER STUDIES REPLICA SERIES 2022

SEPTEMBER-DECEMBER 2022.

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REPLICA SERIES 2022

1-10

FOR MS

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KCSE REPLICA 1
PAPER 1

SECTION A 50 MARKS

1. State ***one*** function for each of the following elements of a computer system: (3mks)
   a) Hardware
   b) Software
   c) Live ware
2. Explain ***two*** health issues that could arise from the use of an unsuitable computer desk (4mks)
3. List ***two*** categories of system software (1mrk)
4. Explain ***two*** contents of a warranty that should be considered when purchasing computer hardware (4mks)
5. Students of a school intend to elect their school captain by secret ballot. State ***three*** ways in which computers can be used to improve the election process (3mks)
6. Figure 1 and figure 2 show icons representing commands used to manipulate graphics in a desktop publishing package.

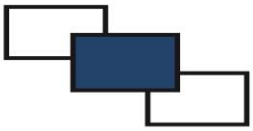


Figure 1

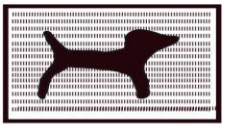
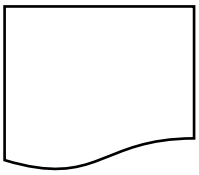


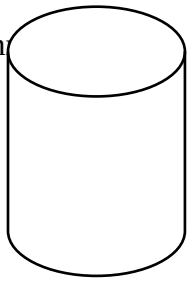
Figure 2

7. Give two differences between a Graphical User Interface (GUI) and a command line Interface. (4mrk)
8. Identify each of the following symbols as used in a system flowchart.

a) (1mrk)



b) (1mrk)



9. A student typed a letter in a word processor and the last line of the letter flowed to the second page. State three ways in which the student could have adjusted the letter to fit on one page without changing the paper size. (3mks)
10. A computer user is unable to retrieve a file stored in a server in an organization. State three reasons why the user would need to contact the network administrator (3mks)
11. State three ways in which mobile phones have affected money transactions in the country (3mks)
12. State two items that an electronic mail should have for it to be sent. (2mks)
13. List four devices that use scanning technology that would be used to capture data directly from source. (2mks)
14. State two ways in which hardware failure is a threat to data security. (2mks)
15. Given the binary number 101011101111011, determine the number of:
    a) Nibbles (1mk)

b) Bytes (1mk)

Section B (60 marks)

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

16. a) state the advantages of using low level programming languages (2mks)

b) other than flowcharts, state three tools that can be used to present an algorithm (3mks)

c) A form one admission interview consists of four tests: Mathematics, English, Kiswahili, and Science. In order to qualify for admission, an applicant must attain a minimum average of 65% in four tests and not less than 70% in Mathematics. All applicants must for the interview. Draw a flowchart that would read the scores for each applicant and determine whether an applicant is successful or not. (10mks)

17 a) with the aid of a diagram, describe time sharing mode as used in a computer data processing (5mks)

b) A company's management has opted to use computers to process data. State four factors that the management needs to consider when selecting the company data processing mode. (4mks)

c) Explain the purpose of each of the following in system documentation:

i. User manual (1mk)

ii. Sample data (1mk)

iii. Table descriptions (1mk)

18. a) State the role of each of the following data communication devices

i. Repeater (1mk)

ii. Router (1mk)

b) Figure 3 shows a network based on the bus topology.

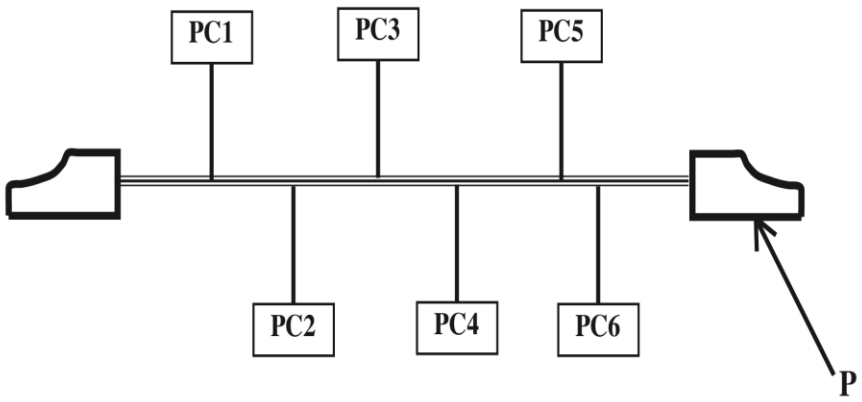


Figure 3

i. Identify the component **P** (1mk)

ii. State the function of the component labeled P (2mks)

c) Students of Matuga secondary school formed an environmental club with a goal of taking part in environmental conversation activities. Outline three ways in which they can use the internet to achieve this goal. (3mks)

d) i) A company has three branches A, B and C where A is the headquarter. The local area network (LAN) at A is directly connected to the LAN at B also directly connected to the LAN at C. Explain two benefits of having the LAN at B also directly connected to the LAN at C. (4mks)

ii) State three ways in which a company can protect its computer network from hackers (3mks)

19. (a) The following is an extract from a document created using a word processor.

CHALLENGES FACING THE YOUTH IN TODAY'S SOCIETY

Most of the problems facing today's youth are not restricted to any one ethnic or religious group, but affects young people generally. Studies have shown that issues such as drug abuse, crime, violence, sexuality and poverty are the most serious challenges afflicting them

Other challenges include

- Identify crisis: *Who am i?*
- Lack of self-confidence and low esteem: *I am worthless?*
- Sense of hopelessness: *where am I going?*
- Confusion and ambiguity concerning moral issues: *what is right and wrong?*
- Negative impact of electronic media: *Entertainment*?
- Competitiveness in education the even playing field: *Excellence by whom?*

~~Not Me~~

a) Identify six formats that have been applied on the extract. (3mks)

b) State three tools in a word processor that would help a user to minimize spelling mistakes when creating a document (3mks)

c) The following is an extract of a spreadsheet created to manage sales. Use it to answer the questions that follow.

	A	B	C	D
1	ITEM NAME	UNIT PRICE	UNITS SOLD	
2	Bed	12,300	2	
3	Wardrobe	16,000	4	
4	Blanket	5,000	4	
5	Mattress	7,000	5	
6	Table	10,000	3	

i) Write a formula that will compute the number of items whose unit price is more than 10, 000. (3mks)

ii) if the formula =$B2 * C$2 was placed in D2, state the output if it was copied to D3. (1mk)

d) A school administers examinations to all students in science, humanities and languages. Use the entities: EXAMINATIONS, STUDENTS, SCIENCES, HUMANITIES and LANGUAGES to illustrate a network database model. (4mks)

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

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

i. 111.101_2 to decimal (3mks)

ii. 14.6875_{10} to binary (4mks)

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

i. Signed magnitude representation. (2mks)

ii. Two's compliment (2mks)

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

$110.11_2 + 11.011_2$

PAPER 2

ADM NO	NAME	STREAM	COMP.	ART.	BUS	ENG	MAT	TOTAL	STUDENT MEAN
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	Okunyuk	K	89	69	65	53	51		
C009	Nekesa	H	69	58	45	54	52		
C010	Simiyu	H	85	46	78	52	53		
TOTAL FOR H									
TOTAL FOR K									
	TOTAL								

QUESTION 1

a) Using a word processor, create the following table as it appears and save it as Table1 (25mks)

1. Sort the table's content by Stream in ascending order (1mk)
2. Merge the cells containing identical streams (1mk)
3. Save the changes made to the table as Edited_Table1 (1mk)
4. Using appropriate formula, determine: -
   - ✓ TOTAL MARK (4mks)
   - ✓ STUDENT MEAN (4mks)
   - ✓ TOTAL FOR STREAM H (4mks)
   - ✓ TOTAL FOR STREAM K (4mks)

   TOTAL FOR ALL STREAMS (4mks)
5. Print: (2mks)
   - Table1
   - Edited_Table1

Question 2

The following table contains details of Baharini Girls school **(50MARKS)**

ADM NO	Stud name	DOB	KCPE MARKS	RECEIPT NO	Fees Paid(kshs)	Fees Bal(kshs)	House No	House Name	House Capacity
1001	Alice K	7/4/1999	380	101	20000	5000	H20	simba	200
1050	Lilly O	2/3/2002	350	894	18000	7000	S08	chui	150
1202	Mary	8/10/2000	400	500	23000	2000	P30	Kifaru	180
1025	Juliet	4/4/2000	358	258	25000	0	H20	Simba	200
1200	Joan	5/1/2001	398	259	15000	10000	S08	chui	150
1278	Milly	3/4/1998	402	200	15000	10000	H20	simba	200
1201	Linet	2/7/1998	356	205	20000	5000	P30	kifaru	180
1203	Lisper	9/5/2001	403	209	25000	0	S08	chui	150

REQUIRED

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

KCSE REPLICA 2
PAPER 1

SECTION A [40 MARKS]

*Answer **ALL** questions in this section in the spaces providd*

1. State **three** features of fifth generation computers. . (3 marks)

……
……
……..

2. Using relevant examples distinguish between a formula and function. (3 marks)

……
……
……..

3. A publisher intends to use a desktop publishing programme to create a publication which is to have many graphics. State **three** ways in which the graphics may be acquired for this purpose. (3 marks)

……
……
……

4. The management of an organisation intends to purchase a printer. State **three** factors that they should consider during the purchase. (3 marks)

……
……
……..

5. State **three** reasons why it is important to define data types of fields in a database correctly. (3 marks)

……
……
……..

6. An engineering company requires a computer system to design roads and bridges. (2 marks)
Explain one suitable choice for:
(i). Output device;

……
……

(ii). Software.

……
……

7. State **three** circumstance under which the use of wireless communication would be preferred in data communication. (3 marks)

……
……
……..

8. Headache, back and neck pain may result from the use of computers. State how each of them can be minimized. (2 marks)
(a). Headache

……
……

(b). Back and Neck Pain

……
……

9. Explain the importance of each of the following in word processing:

(i). tab stops; (2 marks)

……
……

(ii). Section breaks. (2 marks)

……
……

10. State **three** problems associated with using e-mail technology for communication. (3 marks)

……
……
……..

11. State **two** ways in which each of the following can be prevented

(a). Software errors (1 mark)

……
……

(b). Computer fraud (1 mark)

……
……

12. Differentiate between analogue data and digital data as used in computers. (2 marks)

……
……
……..

13. State **four** properties that an operating system displays about file. (2 marks)

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……
……..
……

14. State the functions of each of the following keys on the computer keyboard. [2 marks]

(a). backspace;

……
……

(b). insert (ins)

……
……

15. Give **three** file organization methods in a computer. (3 marks)

SECTION B [60 MARKS

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

16.(a). State **three** ways in which a programmer can make program code easy to follow. (3 marks)

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……
……..

(b). Outline **two** disadvantages of low level programing languages. (2 marks)

……
……

(c).Differentiate between compilers and interpreters as used in programming. (2 marks)

……
……

[d). A trader bought a car from a manufacturer and later sold it to another person. Write a pseudocode for a program that will accept the buying price and the selling price of the car, determine whether the trader made a profit/or loss, calculate the profit/loss and display it. (4 marks)

(e).Draw a flowchart for the above pseudocode. (4 marks)

17.(a). Subtract 0111_2 from 1001_2 (2 marks)

(b). Using two's compliment, subtract 7 from 4 and give the answer in binary notation. (4 marks)

(c). Convert

(i). $91C_{16}$ to octal (3 marks)

(ii). 377_8 to hexadecimal (3 marks)

iii). 9.625_{10} to binary (3 marks)

18. [a].Explain three circumstances under which observation method may be preferred during data collection.

(6 marks)

(b). State **three** activities that may be carried out during system implementation. (3 marks)

……

……

……..

(c). Explain **three** approaches that may be used to replace an old system with a new computerized system (3 marks)

……

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……..

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……..

19. (a). What is meant by each of the following terms as used in data security and controls? (2 marks)

(i). Confidentiality

……

……

(ii). Industrial espionage

……

……

(b). Jane a form four student was advised to partition a hard disk for her computer. Explain **two** reason that may have necessitated this. (4 marks)

……

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……..

……

……

……..

(c). If one table in a database contains the field: EMPLOYEE **- ID, LAST – NAME, FIRST – NAME** and **HIRE – DATE** and another contains the fields **DEPARTMENT, EMPLOYEE – ID** and **SALARY**, it is possible to establish a relationship between the two tables. (6 marks)

(i). Name the type of such a database

……

……

(ii). What type of relationship can be established between the tables? (1 mark)

……

……

(iii). Provided the most appropriate data types for each of the fields. (3 marks)

……

……

……..

……

……

……..

(d). A publishing firm designed the following publication using a DTP software,

(i). Give **two** reasons why the firm prefer using DTP instead of Word Processors. (2 marks)

……
……

(ii). Identify **four** formatting features used in the designing the publication. (2 marks)

……
……
……..
……

20. (a) State the function of each of the following

(i). Network Interface Card (1mark)

……
……

(ii). Modem (1mark).

……
……

(iii). Repeater (1mark)

……
……

(b). State any t**hree** reason why the fibre optic cable is preferred for data transmission over the other cables. (2 marks)

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……
……..

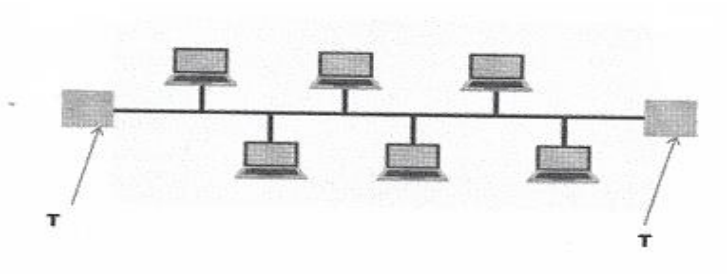
(c). State **two** functions of networking operating systems other than providing network security. (2 marks)

……
……

(d). Explain **four** advantages of networking. (4 marks)

……
……
……
……

(e). The figure below shows a network topology. Use it to answer the questions that follows:



(i). What is the name of the topology? (1mark)

……
……
……
……..

(ii). What is the work of the part labelled T. (1 mark)

……
……
……
……..

(iii). Highlight **one** disadvantage of the above topology identified in 20(e). (1 mark)

……
……

PAPER 2

1. The document below is a brochure of KENYA UNIVERSITY AND COLLEGES CENTRAL PLACEMENT SERVICE (KUCCPS). Use a desktop publishing package to design it exactly the way it appears with the following specifications:

(a) Create a brochure named KUCCPS by creating a new master page with the following page layout.

(i) Paper size A4

(ii) Orientation: Landscape.

(iii) Margins guides 0.5inch or 1.3cm on top and bottom, 0.5 inch or 1.3cm inside and outside.

(iv) Put 30% tint accent 3 background (7 marks)

(b) Enter the text and objects and format them as they appear. Use Font size 12 for the text and font size 14 for the titles. (40 marks)

(c) Save the publication as KUCCPS (1 mark)

(d) Print the publication (2 marks)

KENYA UNIVERSITIES AND COLLEGES CENTRAL PLACEMENT SERVICE

FUNCTIONS

1. Coordinate the placement of government sponsored students to universities and colleges.
2. Disseminate information on available programmes, their costs and the areas of study prioritised by the government.
3. Collect and retain data relating to university and college placement.
4. Advise government on matters relating to university and college student placement.
5. Develop career guidance programmes for the benefit of students.
6. Perform any other function as assigned by the universities Act of 2012.

PLACEMENT

- All universities that offer bachelor's degree programmes and are duly registered by the commission for University Education (CUE) or one of its predecessors are eligible.
- Colleges are eligible if they offer diploma programmes approved by the Technical and Vocational Education and Training Authority (TVETA) or its one of its predecessors.

PROGRAMME ELIGIBILITY

- For a specific programme to be eligible for government sponsorship, it must:
- Be approved by the respective regulating agency.
- Be offered exclusively by the eligible university or college.
- Lead to the award of a Bachelor's degree offered by an eligible
- institution.
- Lead to the award of a diploma offered by an eligible institution.
- Obtain, in advance, accredation by the relevant professional/regulating bodies where applicable.
- Be identified as priority area of training by the government.
- Attract applications from eligible applicants.

APPLICANTS ELIGIBILITY

An applicant is eligible if he/she is:

- A Kenyan citizen
- A KCSE candidate who has never before benefited from government Sponsorship; however, candidates of the year preceding the selection are given priority.

2. Company XYZ sells products P, Q and R. Figure 1 shows an extract of a spreadsheet for the company's salespersons and their respective sales in shillings for each product.

	A	B	C	D	E	F	G	H
1	**SALES PERSON**	**PRODUCT P**	**PRODUCT Q**	**PRODUCT R**	**TOTAL SALES**	**POINTS**	**CATEGORY**	**TOTAL PAY**
2	Thomas	4,000.00	6,230.00	7,500.00				
3	Jane	4,500.00	6,700.00	8,000.00				
4	Gabriel	5,678.00	10,000.00	7,800.00				
5	Kipkorir	3,200.00	4,000.00	9,600.00				
6	Anyango	8,000	7005.00	8,900.00				
7	Nekesa	9,800.00	9,670.00	10,000.00				
8	Kinuthia	2,700.00	3,400.00	2,300.00				
9	**TOTAL**							

Figure 1

(a) (i) Using a spreadsheet package, enter the above information and save it as **SALES_TABLE.** (9 marks)
(ii) Format the worksheet to appear as it is. (4 marks)

(b) (i) Type a formula:
(I) at cell B9 to compute the total sales for product P; (1 mark)
(II) at cell E2 to compute the total sales for Thomas (1 mark)
(ii) Apply the formulae to the appropriate cells. (2 marks)

(c) A salesperson earns points for the sales of each product based on the following criteria;
- 1 point for every shs 50 for product P,
- 2 points for every shs 65 for product Q,
- 3 points for every shs 40 for product R.

i) Type a formula in cell F2 to compute total points earned by Thomas; (3 marks)
ii) Apply the formula in c(i) to the rest of the salespersons. (1 mark)

(d) A salesperson is categorized based on points earned as follows.

POINTS RANGE	CATEGORY
Over 1300	Gold
1101 – 1300	Silver
Up to 1100	Bronze

Those salespersons attaining a Gold category earn a promotion.

(i) Type a formula in G4 to determine Gabriel's category. (5 marks)
(ii) Apply the formula in d(i) to other appropriate cells. (1 mark)
(iii) Type a formula at G10 to determine the number of salespersons who will earn a promotion (4 marks)

(e) Each salesperson earns a total pay of shs 20,000 plus 2% commission of their total sales. Using absolute referencing, determine the total pay for each salesperson if the value 2 is entered in cell B12. (5 marks)

(f) Create a bar chart showing Product P and Product R sales for each salesperson. Insert appropriate labels on the chart. (9 marks)

(g) Rename the worksheet containing the data as **SalesData** and the chart sheet as **SalesChart** (2 marks)

(h) Print the following: (3 marks)
i) **salesData**
ii) **SalesData** showing the formulae;
iii) SalesChart.

KCSE REPLICA 3
PAPER 1

SECTION A (40 marks)

1. Speech recognition devices are used to capture natural sound and convert the input into digital form. State two problems related to speech recognition devices. (2 marks)

_____

_____

2. One classification of software is system software
   (a) i. What is meant by system software (1 mark)

_____

   ii. Give one example of system software. (1 mark)

_____

   (b) i. Name one other software classification (1 mark)

_____

   ii. Give one example of this type of software (1 mark)

_____

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 marks)

_____

_____

_____

_____

4. Suggest any three reasons why reservation systems are not yet fully implemented by bus operating companies in Kenya (3 marks)

_____

_____

_____

5. Name the three constituent parts of a computer file. (3 marks)

_____

_____

_____

6. State **two** reasons for system reboot. (2 marks)

_____

_____

7. Differentiate between Batch processing and real time processing modes. (2 marks)

_____

_____

_____

_____

8. Outline three ways computers can be used to enhance marketing. (3 marks)
9. Most computerized security systems make use of biometric analysis. Name three physical features of human beings that can be considered in this analysis. (3 marks)

10. Differentiate between *high definition multimedia interface* and *Firewire* interface. (2 marks)

11. Give two reasons why powder and liquid extinguishers are not recommended unlike gaseous extinguishers. (2 marks)

12. Differentiate between Bcc and cc in an email. (2 marks)

13. Since the invention of the first generation of digital computers, much advancement has been realized in the sector of information and technology. Explain two characteristics which have been improved from the first generation to the modern computers. (2 marks)

14. Give three reasons why a mobile phone is regarded to as a computer. (3 marks)

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

A	B	C	D	E	F	G	H
	Adm	**Student name**	**Cat1/50**	**Cat2/50**	**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					
8		Average	**(d)**				
9							

Using the above worksheet write the formula to calculate the values in cells labeled. (4 marks)

SECTION B

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

16.

a) State and describe two types of error that can occur in programming (2 marks)

b) Differentiate between compiler and interpreter as used in programming. (2 marks)

c) Name the two major developments during the second generation programming languages (2 marks)

d) Study the pseudocode below and answer the questions that follow.

```
Start
        N=0
        X=0
    While n < 3
        Repeat
        X = X + 1
    Until x < 2
        N = N +1
    End while
  Print N, X
Stop
```

(i) What will be the output from the program (2 marks)

(ii) Draw a flowchart that was used to come up with the following pseud code (7 marks)

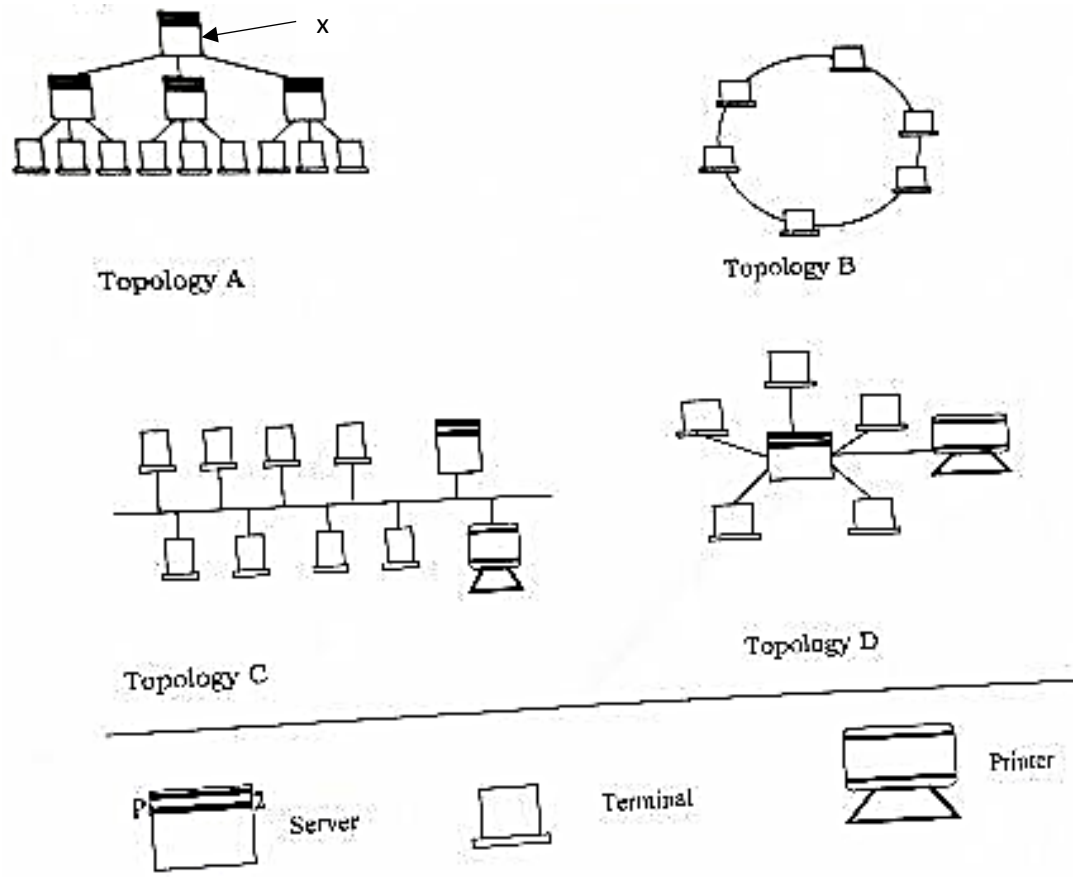
17.

(a) List three advantages of wireless technology (3 marks)

(b) The computer is to be networked, name one extra device that should be fitted on every computer to enable this to happen (1mark)

(c) Data transmission via the internet is done using a mode known as packet switching. Describe this data transmission mode. (2 marks)

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



i) Name the network topologies A, B, C and D (4 marks)

A _____

B _____

C _____

D _____

ii) Explain what happens if server X in topology A fails (1 mark)

_____

_____

_____

iii) List two advantages with network topology B (2 marks)

_____

_____

_____

_____

iv) List two disadvantages associated with network topology D (2 marks)

_____

_____

_____

18.

a) In order to generate information from data items, a set of processing activities have to be performed on the data items in a specific sequence depending on the desired result. Draw a well labeled diagram to illustrate data processing cycle. (2 marks)

b) A data entry clerk experiences some common errors when typing. Most of the time, she finds that:
   (i) After every calculation, the result is less than the expected number of digits required e.g. 345.7896543 the result is given as 345.789.
   (ii) Different characters are typed wrongly, for example instead of typing 12873457 she types 128734S7.

   Identify the two types of errors commonly experienced by the clerk during data processing in (i) and (ii) above respectively. (2 marks)

c) Briefly describe any three electronic data processing modes: (6 marks)

d) State three ways a user can ensure data accuracy is maintained during data processing (3 marks)

e) State two advantages of a computerized filing system as used in data processing. (2 marks)

19.

a) Define a database model (1 mark)

b) List two advantages of using database systems (2 marks)

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

i. Validity integrity (1 mark)

ii. Entity integrity (1 mark)

iii. Referential integrity (1 mark)

d) Briefly describe the three database models (3 marks)

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

i. One – to – one

ii. One – to – many

iii. Many – to – many

f) Explain any three features of database. (3 marks)

20.

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

b) Convert each of the following numbers

i. 101.001_2 to decimal. (3 marks)

ii. 5E6H to octal. (3 marks)

iii. Add 110.01_2 to 11001.0101_2 (2 marks)

c) Using **two's compliment** perform the following arithmetic leaving your answer in binary form. (4 marks)

$13_{10} - 10_{10}$

PAPER 2

1. **a)** Using a word processor type the passage below as it appears and save it as ***Society*.** (40 marks)

ROLES OF PARENTS IN THE SOCIETY

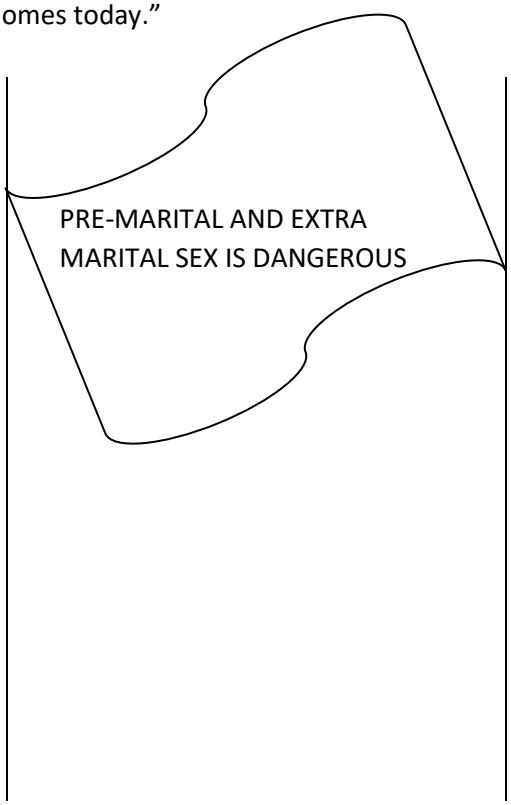
Society has failed and parents have not played their role fully in raising their children. This is according to Jeff Ngari, a counseling psychologist and a deacon with the Reformed Catholic Church. Jeff says the issue of teenage mothers is so big that it should be considered a cry for help. He adds that today's children, lack the guidance they require when it comes to having independent social interactions.

"The idea is not to block them from forming their own relationships, but to make them understand what it means to be in a relationship, especially with the opposite sex, and how far this relationship should go," says Jeff.

And just like the rest of society, parents have not been spared by the wave of moral decay and thus, according to Jeff, they have failed as role models for their children. Due to this, many teenagers are picking up social ills from their parents-the very people they are supposed to look up to.

"For instance, a teenager who has seen his or her mother repeatedly sleep out or come home in the wee hours of the morning will most likely be excited about staying out late out of curiosity, "he says, adding, "this is happening to most of our homes today."

Jeff says many parents are engaging carelessly in extra-marital relationships that leave very little to the imagination of their children, and this is likely to be seen as a normal thing by children, especially teenagers.



As a result, there are many avenues through which teenagers can explore the issue of sex and the greatest worry that girls need to be rescued

Most teenage mothers experience rejection and abuse by their families, friends and wider community, including the church. "No wonder these girls abandon their babies either in toilets or litter bins. The effects of rejection can be fatal-rejection by society is the worst thing anybody can suffer. It kills from within. That is why teenage motherhood is a cry for help and family support is very important, as the result is children giving birth to, and trying to raise babies."

"In the course of my career, I have met mature women who tell me they had abortions when they were very young and they still feel guilty decades later. Some even go to the extent of saying, 'My first-born would be this or that age.' It is very painful."

In Kenya, four in every 10 women who die from unsafe abortion are adolescents; 70% of adolescents engage in high-risk unprotected sex. This is according to a research paper presented by Dr. Richard 0. Muga of the National Co-ordinating Agency for Population and Development, Nairobi-Kenya, 2006.

The alarming figures are why Margaret Muyanga, a counseling psychologist, says open communication between teenagers and parents can be very instrumental in curbing any post- pregnancy abortion or even worse, suicidal tendencies.

b) Copy the Society to a new document and save it as **Society 2** (2marks)

c) Change the paragraph starting with **"For instance……."** to bold italic (2 marks)

d) Look for the word **alarming** and replace it with the word **surprising** (3marks)

e) Using the word count feature count the number of characters with spaces in the passage (2marks)

f) Insert alphabetical capital letter page numbers at the top left side of the document Society 2 and update all the changes. (2 marks)

g) Print the two documents Society and Society 2 (2 marks)

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

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

Table 1 STUDENTS TABLE

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

Table 2 SUPERVISOR S' TABLE

Supervision Number	Supervision Date	Student Number	Supervisor Number	Project Title
100	12/03/2015	C001	L220	Java
200	22/03/2015	C003	L230	Website
300	17/03/2015	C004	L240	Robotics
400	02/03/2015	C001	L220	Java

500	18/03/2015	C002	L240	Robotics
600	12/03/2015	C004	L230	Java
700	11/03/2015	C002	L250	Database
800	12/03/2015	C003	L220	Java
900	12/04/2015	C005	L250	Database
1100	12/04/2015	C002	L250	Database

Table 3 SUPERVISIONS TABLE

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

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

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

d) Create relationships among the tables. (3mks)

e) Enter the data in the table **STUDENT, SUPERVISOR** and **SUPERVISIONS** as shown above. (10mks)

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

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

h) Create a query named **BALANCE2** to display students' Names, project title whose fee balance is above **Ksh.20000.** . (5mks)

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

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

k) Print the following:

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

KCSE REPLICA 4
PAPER 1

SECTION A (40 marks)

Answer all the questions in this section.

1. Identify the transmission mode used when communicating with the devices listed below. (2marks)
   (i) Public address system

   _____

   (ii) Phone chat via WhatsApp

   _____

2. a)List ***two*** categories of system software (2marks)

   _____

   _____

   b) A warranty is an agreement between the buyer and the seller. It spells out terms and conditions after selling a product in case of failure or malfunction. Describe any three basic requirements a good warranty should cover. (3 marks)

   _____

   _____

   _____

   _____

3. Beryl does not understand why computers are said to be Automatic at the same time they have No Intelligent Quotient (IQ) (2marks)

   _____

   _____

   _____

   _____

4. Vero a student from Nyamira Girls lives in a house with full internet access. She spends most of her time on phone and Desktop computer. State any three social issues associated with doing this. (3 marks)

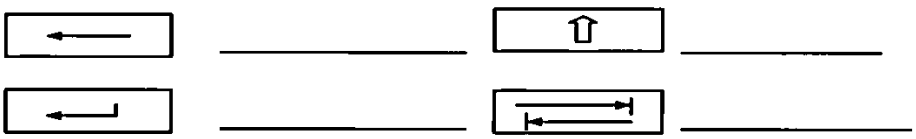
   _____

   _____

   _____

   _____

5. The following are symbols of some keys on the keyboard. Name the keys represented by the symbols (2marks)

6. Give three reasons that might have necessitated the development of Second generation computers. (3 marks)

   _____

   _____

   _____

7. Millicent wrote a program but it did not behave as expected. Describe two types of errors that may hinder the program from running or run but give invalid results. (2marks)

   _____

   _____

   _____

8. Describe two password options that Ms-Word employ to protect its documents. (2marks)

9. Mention two limitations of using counterfeit software. (2marks)

10. Name the computer parts listed below. (2marks)

Diagram	 *Figure 1*	 Figure 2
Name		

11. Describe the following functions of the operating system. (3marks)
    (i) Network Management

    (ii) Security

    (iii) Interrupt Handling

12. State three ways in which computer virus infection can be prevented other than through restricting the usage of removable storage media (3marks)

13.
    (i) Define the term normalization. (l mark)

    (ii) State a reason to justify why database administrators usually perform normalization when creating a database for an organization. (2marks)

14. Mention three factors to consider when choosing a file organization method. (3marks)

15. As Jayden was entering data into the computer, He typed byocott instead of boycott.
    i. Identify the type of error made by Jayden (1 Mark)

    ii. Other than using direct data entry devices, state two other methods Jayden can use to avoid the error (2 Marks)

SECTION B (60 marks)

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

16.

(a) Describe the following qualities of an algorithm. (2marks)

(i) Definiteness

_____

_____

(ii) Finiteness

_____

_____

b) Describe the three essential programming constructs which form the basis of structured programming

(3 marks)

_____

_____

_____

_____

_____

_____

_____

_____

c) State two advantages of low-level languages (3 marks)

_____

_____

_____

_____

d) The table below shows the monthly charges applicable to different amount of water consumed by clients in a particular town

Volume of Water consumed in m^3	Consumption in Kshs
0 – 10	200
10 - 20	350
20 – 30	500
Over 30	1000

In addition to the consumption, the amount of the water bill will consist of a standing charge of Kshs 200 and a sewerage fee equivalent to 20% of the consumption.

(i) Write a pseudo code for a program that prompts a user to enter the volume of water consumed per month. The program then computes and output the amount of the water bill in a year.

(7 marks)

17.

(i) The table below is an extract from a spreadsheet use it to answer the questions that follow

	A	B	C	D	E	F
1	Customer Number	Product Name	Quantity	Unit Cost	Total	Type Remark
2	145321	Malomalo	20	100	2000	Bronze
3	143561	Kisambo	40	200	8000	Silver
4	156784	Weeti	40	400	16000	Gold
5	123454	Wheat	20	50	1000	Bronze
6	453218	Nyozi	10	10	100	Bronze
	GRAND TOTAL				27100	

(a) Identify the Ms-Excel feature that is used in cell A1 and B1 to enable the texts appear the way they are. (1mark)

_____

(b) Name the data type in cell E4 and F3. (2marks)

_____

_____

(c) Use absolute reference to represent a formula that is used to calculate total for wheat (2 marks)

_____

(d) Suggest how named reference can be used to calculate the GRAND TOTAL. (3marks)

_____

_____

(e) Write a formula that will classify product type base on the total as shown in the table below. (2 marks)

Total	Type
0-5000	Bronze
5001-10000	Silver
10001 and Above	Gold

_____

_____

_____

(ii) State the difference between Cc and Bcc. (2marks)

_____

_____

_____

(iii) Mention three factors to consider when choosing an ISP. (3marks)

_____

_____

_____

_____

18.

(a) What is the binary equivalent of $^{12}/_{32}$ base 10. (4marks)

(b) What is the decimal equivalent of the number 1.0111_2? (3 marks)

c) Explain four control measures that can be taken to avoid unauthorized access to data in a Computer system or data. (4 marks)

d) List four career opportunities in the field of ICT. (2marks)

e) With reference to DTP describe the following terms. (2marks)

(i) Gutter

(ii) Stroke

19.

(i) State two circumstances under which a system analyst may prefer to use questionnaire instead of observation during facts finding. (2marks)

(ii) Mention three operational factors that a system analyst need to consider when sourcing for hardware and software to be used with the proposed system. (3marks)

(iii) Describe two advantages of parallel changeover. (2marks)

(iv) Name any two wireless communication devices (2Marks)

v) Describe two factors to consider when choosing a transmission media. (2marks)

vi) The Chairman IEBC has called upon a System Analyst to implement an electronic rating system. He intends to use voter's fingerprints, Identity cards and voter's cards as security measures to ensure free and fare elections. Recommend with reasons four input devices that they should use/buy. (4marks)

20.

(i) The following records were entered in a database

Date	Class	Registration No

1/1/2007	East	1425-A
1/1/2008	North	1426-A
12/1/2008	North	1426-B

(a) Suggest a validation rule for date given that it should be not before 1/1/2006 (2marks)

(b) List the records that will be displayed after running the following criteria? (2marks)

(i) <>#1/1/2008ondate

1426-A on class

(c) Write the input mask for registration No (1mark)

(d) Choose the most appropriate data type for Date and Registration No (2marks)

Explain the following terms as used in Word Processing (3marks)

(i) Word Wrap

(ii) Orientation

(iii) Indenting

f) **State three** specifications that should be set in the print dialog box when printing a document (3 marks)

g) State **two** major reasons why organizations are opting for telecommuting. (2 marks)

PAPER 2

1. The data in the tables below were extracted from SuperStar football league management system.

Table 1: TEAMS TABLE

Team Code	Team Name	Address	Tel No.	Reg Fee
01	Maji Mazuri High	Box 0012	021542148	5000
02	Sunshine School	Box 2454	025485267	3500
03	Kabarak High	Box 458	025478756	4700
04	Sacho High	Box 635	032547855	2400
05	Marigat School	Box 2446	032458754	1200
06	Nakuru High	Box 6589	015487564	1400
07	Baringo High	Box 1254	031204543	5000

Table 2: RESULTS TABLE

Team Code	Games Won	Games Lost	Games Draw
01	12	2	2
02	10	3	3
03	4	8	3
04	9	3	4
05	7	3	5
06	7	6	4
07	5	9	2

a) Create a database named "SUPERSTAR" to store the data above (12 marks)

b) Format the *Reg Fee* field as follows:
   i) To display the entries with the prefix: "KSh." correct to two decimal places (2 marks)
   ii) Restrict entries to positive values only and should return an error message "*Error: enter positive values only*" if an out of range value is entered. (2 marks)

c) Validate Team Code to 2 characters only (2 marks)

d) Create a suitable table relationship between the tables (3 marks)

e) Design a form for each table and use it to enter the data into the tables (9 marks)

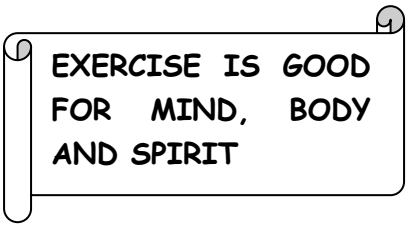
f) i) Create a query named **TotalGamesQuery** to display the fields: Team Code, Team Name and Total games played. (4 marks)
   ii) Create a query to show the team name and total points. (**Note: A Win in a game earns a team 3 points, a draw 1 point and a loss 0**). The query should show the 3 best teams based on the total points. Save the query as **BestTeamsQuery**. (5 marks)

g) i) Create a report named **RegReport** to display the Team name, Address, Reg Fee. The report should show the total registration fee collected from all teams. (5 marks)
   ii) Sort the records to show the team that has paid the highest amount of registration fee first. (2 marks)
   ii) Title the report as "*Income from registration*" (2 marks)

h) Print each of the following: (2 marks)
   i) Teams table and Results table
   ii) TotalGames Query and BestTeamsQuery
   iii) RegReport

2. a) Open a word processing program and create the document below exactly as it appears. (30 marks)

BENEFITS OF CO-CURRICULAR ACTIVITIES IN LEARNING INSTITUTIONS



When co-curricular activities such as sports, drama, clubs, music etc. are integrated in the curriculum, they help learners acquire balanced growth. The following are some of the reasons why students should be encouraged to participate in co-curricular activities while in learning institutions.

Co-curricular activities encourage collaboration and help achieve goals

Aggressively going for a common goal with team mates and a team manager, teaches one how to shape a collective synergy and effectively communicate the best way to solve problems *en route* to victory. This will be very helpful when one encounters problems at place of work or at home.

Co-curricular activities boost self esteem

Realising that hard work pays off brings about self –confidence. Competing and winning in a co curricular activity inspires one to achieve in any other goal set. This is very exciting and rewarding.

Co curricular activities augment academic work.

Engaging in co curricular activities requires a lot of time and energy. Sports, drama and Music require skills of memorization, repetition and learning which are directly relevant to class work.

For all these reasons, it is always a great decision to get involved in co-curricular activities.

CO CURRICULAR ACTIVITIES SCHEDULE FOR THE YEAR

<table>
<tr><th></th><th>TERM 1</th><th></th><th>TERM 2</th><th></th><th>TERM 3</th></tr>
<tr><td>Primary Schools</td><td colspan="2">Football</td><td rowspan="2">Athletics</td><td rowspan="4">Music Festivals</td><td></td></tr>
<tr><td>Secondary Schools</td><td>Indoor games</td><td>Football</td><td>School-based activities</td></tr>
<tr><td>Technical colleges</td><td rowspan="2">Swimming</td><td>Indoor Games</td><td>Rugby</td><td>Indoor games</td></tr>
<tr><td>Universities</td><td colspan="2">Football</td><td>Motor Sports</td></tr>
</table>

b) Save the document created in (a) above as **cocurricular** in your folder (2 marks)

c) Insert the text "Co curricular Department Resources" as footer. Apply italics to the footer and align it to the centre. (2 marks)

d) Insert a section break at the end of the document created such that the new section starts on a new page. (1 mark)

e) i) Insert a pie chart in the new section to represent the information shown in the following table: (5 marks)

	Total Annual Budget
Primary Schools	20
Secondary Schools	10
Technical Colleges	15
Universities	5

ii) Apply a grey background to the chart area created in (i) above (2 marks)

iii) Insert a caption "The Annual projected cost of organising co curricular activities (Ksh. 000,000)" (2 marks)

iv) Change the orientation of the page containing the chart to landscape (2 marks)

f) Insert page numbers at the top right hand corner of the document (2 marks)

g) Save the document and print it on both sides of the paper (2 marks)

KCSE REPLICA 5
PAPER 1

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

1. Mention two devices that can connected to the computer via HDMI cable **(2marks)**

_____

_____

_____

2. State three ways in which ICT can be used to enhance customer service delivery in a supermarket (**3marks**)

_____

_____

_____

3. Describe two roles of a Web designer **(2marks)**

_____

_____

_____

4. Mr. Kamau is a teacher at Chianda High School used Ms-Excel to process the marks obtained by his student during the term. The table below shows the details entered in the Ms-Excel worksheet

	A	B	C	D	E	F	G	H	I
1	**Name**	**CAT1**	**CAT 2**	**CAT TOTAL**	**EXAM**	**TOTAL MARKS**	**POSITION**	**GRADE**	**REMARK**
2	**Mark Jama**	**14**	**06**	**20**	**56**	76	**1**		
3	**Caleb Wekeza**	**13**	**08**	**21**	**34**	**55**	**6**		
4	**Kanini Mulue**	**10**	**04**	**14**	**59**	**73**	**3**		
5	**Justine Melanie**	**11**	**07**	**18**	**57**	**75**	**2**		
6	**Julia Wahome**	**06**	**09**	**15**	**48**	**63**	**5**		
7	**Austin Kilome**	**08**	**07**	**15**	**50**	**65**	**4**		

Hints

CAT1is out 15, CAT2 is out 15 and Exam is out 70

(a) Give the formula used to calculate the Total Marks for Julia Wahome **(1mark)**

_____

(b) Write a function that give each student his position in class based on the performance **(2marks)**

_____

_____

(c) Write a logical function that will display the following remarks in column I **(2marks)**

Total Marks	Remark
0 - 49	**Fail**
50 - 59	**Above Average**
60 - 69	**Fair**
70 - 79	**Good**

80 - 100	**Excellent**

5. Give two reasons to justify why SATA cables are used in modern computers to connect the hard disk to the motherboard **(2marks)**

6. Give three file systems supported by windows operating system **(3marks)**

7. Describe the use of the following keys found on a standard keyboard **(2marks)**
   (a) Esc

   (b) Prt sc

8. Explain the following terms with references to algorithm
   (a) Definiteness **(2marks)**

   (b) Finiteness **(2marks)**

9. Mention two ICT related courses offered in Kenyan universities at undergraduate level **(2marks)**

10. What is flaming **(2marks)**

11. A computer operator was working with a computer using windows operating system. After sometimes he started experiencing the following problems
    - Abnormal restarting
    - Computer failing to load the operating system
    - Computer hangs
    - Computer displaying Fatal Exception error on the screen

    State three possible causes of the problems mentioned above **(3marks)**

12. Identify two limitations of traditional approach to system development **(2marks)**

13. Use flowchart to demonstrate how IF THEN and REPEAT..... UNTIL can be implemented **(2marks)**

14. State three functions of Repeater stations in data communication **(3marks)**

15. Describe three layout guides available in DTP that assist a user to place an object in a preferred position **(3marks)**

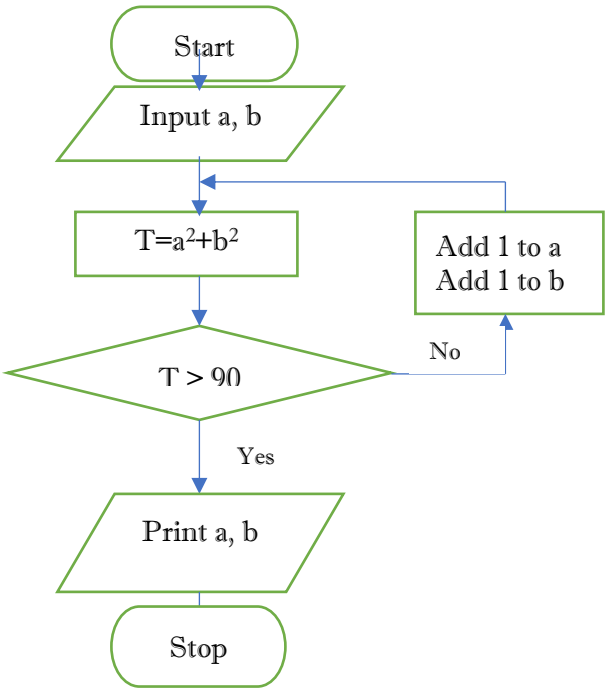
SECTION B (60 MARKS)

16.

(a) State three features of a compiler **(3marks)**

(b) When writing a computer program programmers are always advised to use approaches and techniques that makes the program easy to follow and maintain. List four ways in which a programmer can make program code easy to follow **(4marks)**

(c) Study the flowchart below and use it to answer the questions that follow



(i) Given that the user keyed in 3 as the value of a and 1 as the value of b get the final output of the flowchart **(3marks)**

(ii) Use a pseudo code to represent the flowchart in (c) **(5marks)**

17.

(a) Briefly describe the three main coding schemes **(3marks)**

(b) Convert the following numbers to binary number

(i) B2.AAH **(3marks)**

(ii) $\frac{13}{64}$ base 10 **(3marks)**

(c) The table below was created using Ms-Access use it to answer the questions that follow

Table Name: Product

Product ID	Product Name	Unit Cost	Quantity	Total
P00101	Milk	120	34	4080
P00201	Bread	100	56	5600
P00301	Beans	150	45	6750

(i) State the most appropriate data type for Product ID and Total **(2marks)**

(ii) Suggest how you would set the input mask for the Product Name so that the data entered in that field appear the way they are in the table **(2marks)**

(iii) Represent the dynaset shown below in a SQL form given that the table Name is product **(2marks)**

Product ID	Product Name	Unit Cost	Quantity	Total
P00101	Milk	120	34	4080

18.

(a) Describe four services available in the internet that support communication only **(4marks)**

(b) Modern computing have embraced the use of drop box, google drive and OneDrive. These platforms are hosted by the internet and many computer users prefer backing up their data using these facilities. Give three reasons to justify this phenomenon **(3marks)**

(c) Janetitle a computer student from Maranda High school launched the browser to access the internet , the browser displayed an error message Server Not Found on the screen this didn't allow Janetitle to access the internet. State three possible causes of this anomaly **(3marks)**

(d) Briefly describe the following features of word processor **(2marks)**

(i) Subscript

(ii) Drop cap

(e) State two arithmetic operation that can be performed on a row of a numeric data in a word processor table **(1mak)**

(f) In each case of (e) above give the expression used **(2marks)**

19.

(a) Enumerate four breakthrough in health care instigated by ICT **(4marks)**

(b) Mention four application areas of Artificial Intelligence **(3marks)**

(c) List three scanning devices available at Electronic Point Sale Terminal **(3marks)**

(d) Describe two ways of preventing eavesdropping **(2marks)**

(e) System failure is considered as threat to data security. Describe three measures an organization should put in place to guard against system failure **(3marks)**

20.

(a) Identify modes of data communication represented in (i), (ii), (iii) and (iv) below **(4marks)**

(i) Principal Addressing students in assembly using public address system

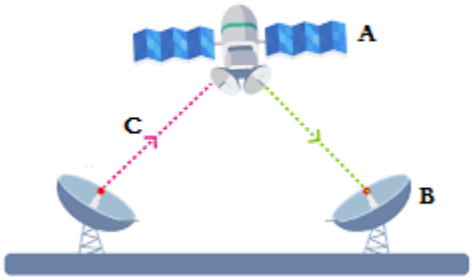
(ii) WhatsApp chat

(iii) Phone conversation

(iv) Walkie talkie conversation

(b) List three challenges experienced by computer networks that are set up using twisted pair cables **(3marks)**

(c) Study the diagram below and use it to answer the questions that follow



(i) Identify the parts labelled A, B and C in the diagram above **(3marks)**

(ii) State function of the part labelled A **(2marks)**

(d) Name any three components of virtual reality **(3marks)**

PAPER 2

1. The table below shows list of students admitted to Nyambaria High School under different sponsors.

(a) Open a database program and create a database named **NHS.**(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**. (8 marks)

Table 1: SponsorTable

SponsorID	Sponsor Name
S1	Wings
S2	Majani
S3	Elimu

Table 2: StudentTable

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: AmountTable

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:

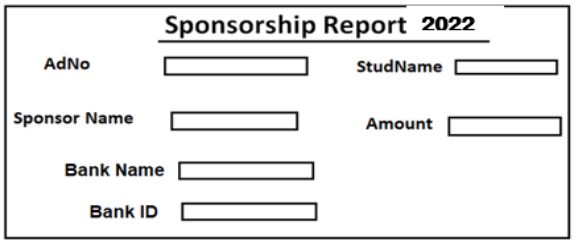
(i) AdmNo, Sponsor name, age and Students whose first name start with letter **"B"** and whose payment Bank is **"COOP"** Save query as **B-query**.
(5marks)

(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 A**mount query** display all the records grouped by mode of payment and find the average per mode of payment
(4 marks)

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

(e) Create **S-report** to display the fields as it appears in the figure below.
(5marks)



(f) Print the following: (4 marks)

(i) The Student table
(ii) The B- query
(iii) The chart
(iv) The S-report

2. The following data was extracted from Applicants' file for Maranda high school comp/Maths teacher recruitment

(a) (i) Enter the data as it appears in a spreadsheet. And save it as **INTERVIEW**
(13mks)

	A	B	C	D	E	F	G	H	I
1	NAME	ADDRESS	TOWN	comp	Math	Eng	MEAN	APPLICANT'S POSITION	REMARK
2	Willington	400	Nairobi	40	60	60			
3	Benjamin	3201	Kisumu	55	50	40			
4	Nyambane T.	5600	Kisii	70	60	50			
5	Grace	1236	Bungoma	30	80	70			
6	Rebbeca	48	Eldoret	75	70	80			
7	Fatuma A	6032	Mombasa	40	30	50			
8	Kamau J.	8021	Nyeri	50	40	55			
9	Achieng .	209	Siaya	80	50	70			

(ii) Insert two blank rows at the top of the worksheet. (1 mark)
(iii) Enter the following title and subtitle in the blank rows respectively; MARANDA HIGH SCHOOL RECUIRTMENT FILE and APPLICANTS DETAILS.
(3marks)
(iv) Centre the title and subtitle across the columns that contain data.
(2marks)
(b) Using functions, compute:
(i) The mean for each Applicant and format it to 2 decimal places. (3marks)
(ii) The position of each Applicant. (3marks)
(iv)The highest and lowest score for Benjamin, enter the answers in L3 and M3 respectively
(3marks)
(c) The school wishes to analyze the applicants' data in order to find those applicants who qualify for recruitment. Successful candidates MUST meet the following minimum requirements;
i. Must have scored a mean of 40 marks and above;
ii. Must have scored 60 marks and above in Computer;
iii. Must have scored 50 marks and above in either Mathematics or English.
Use the above criteria to remark If the applicants qualifies, the function should display 'Successful'. Otherwise it should display 'Unsuccessful'.
(5marks)
(d) Using a function find the number of applicants who are successful.
(2marks)
(e) Copy the entire worksheet to sheet 2 and rename it as Successful Applicants.
(2marks)
(f) Filter the 'Successful Applicants' sheet to display the records of those applicants who are successful.
(2marks)
(g) In a new worksheet Create a bar chart to compare the performance of mathematics and computer for all applicants (4marks)
(i) Insert SUBJECT **PERFORMANCE** as the heading of the chart (2 mark)
(ii) Assign the appropriate LEGENDS to the chart (1 mars)
(v) Name the axis appropriately (2 marks)
(h) Print: (2 marks)
I. **INTERVIEW**;
II. Successful Applicants Sheet;

KCSE REPLICA 6
PAPER 1

SECTION A (40 Marks)

*Answer **all** questions in this section*

1. Define pixels as used in monitor (2mks)

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……
……..

2. Give an explanation why computer laboratory should have (2mks)

i. Good ergonomics

……
……
……..

ii. Uninterruptable power supply

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……
……..

3. Highlight two measures that need to be put in place to avoid risks associated with electric shock (2mks)

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……
……..

4. a) Explain two functions of network servers (2mks)

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……
……..

b) i) Define the term crosstalk as used in networking (2mks)

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……
……..

ii) Explain briefly how the token ring network functions (2mks)

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……
……..

5. State four advantages of computerised simulation and modelling (2mks)

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……
……..

6. Explain two parts of a task bar (2mks)

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……
……..

7. Describe TWO elements of Graphical User Interface (2mks)
……
……
……..
……
……
……..

8. State two types of computer viruses (1mk)
……
……
……..
……

9. Explain two application areas of artificial intelligence (3mks)
……
……
……..

10. Differentiate between indent and tab as used in word processing: (2mks)

……
……
……..

11. a) What is a section break as used in word processing (2mks)
……
……
……..

b) Describe two types of section break. (2mks)
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……
……..

12. Susan, the director of an organization, had an important meeting in another country. Instead of going there, she decided to participate using video conferencing.

a) Explain video conferencing (2mks)
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……
……

b) Give two advantage of using video conferencing (2mks)
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……

13. Samu also wants to buy a printer because he frequently prints photos. He is uncertain whether to get a laser printer or an impact printer. Which printer should he buy and why? (2mks)

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……
……

14. What does CMOS stand for (1mk)

……
……

15. Study the following sample advert that was extracted from a newspaper and answer the questions that follow

Dell optiplex GL380 Desktop
Intel Duo Corei3-550 processor
23" TFT
4GB DDR2 RAM
750GB hard drive
Windows 7 Home Premium
Built-in wireless networking
Wireless keyboard and mouse

i. Explain the meaning of each statement in the extract (3mks)

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……
……

ii. Identify three main determinants of the price of the computer (3mks)

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……
……

SECTION B (60 marks)

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

16. a) The factorial of an integer number is defined as the product of the number from 1 up to and including the number. Thus three factorial, 3!, is equal to3* 2*1 which is 6. Draw program flowchart that will allow the user to enter a positive integer, compute and display the factorial of the value entered. (7mks)

……

b) Write a pseudo code for the above program (6mks)

……
……
……

c) Suppose the user entered integer 5 as the input in the above program. Use the flowchart to dry run and give the output that will be displayed by the program.(Show your working) (2mks)
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……
……
……

17. a) What is the hexadecimal equivalent of 537_8 (3mks)

……
……
……

b) Use two's compliment to solve the following (leave your answer in binary) (2mks)
12_{10}-17_{10}
……
……

c) State two examples of unguided transmission media (2mks)

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……
……
……

d) Differentiate between job displacement and job replacement with reference to Impact of ICT on society (2mks)

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……
……

e) With the current ICT trends, it is possible to work from home (4mks)
i) State two advantages of working from home
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……
……
……
ii) State two disadvantages of working from home
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……

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……

f) Convert 5.125_{10} to its binary equivalent (2mks)

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……

18. (a.)Explain the difference between the following pairs of terms in reference to the network (4mks)

(i.) Multiplexing and demultiplexing

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……
……

(ii) Simplex and half duplex transmission

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……

(b.) Explain three types of physical network topologies (6mks)

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……

(c.) Explain three demerits of social media such as ***facebook*** in modern society (3mks)

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……

(d.) Define telecommuting (2mks)

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……

19. a) List three ways in which data integrity can be compromised. (3mks)

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……

b) Distinguish between spyware and antispyware. (2mks)

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……

c) Describe biometric security (2mks)

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……
……

d) Describe five types of Read Only Memory (5mks)

……
……

e) Highlight the indications of a computer infected by a virus. (3mks)

20. a) On her first day at work as a school librarian, Sera notices that book records are kept manually using a card system. She suggests to the Principal that they use a database. State three reasons why using a database would be helpful to the librarians (3mks)

……

……

b) Give four examples of DBMS programs which could be used. (2mks)

……

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……

……

c) The manager of Pacific Company Ltd uses a database to keep records of his employees as shown in the table below. Use this information to answer the questions that follow.

Employee

ID	Name	Age	Date of Birth	Salary	Department
AA1040	Thomas Debu	38	03-Dec-72	$35,673.00	Adminstration
AA1050	Salata Bale	35	26-Mar-75	$24,681.00	Finance
AB1020	Kare Bond	34	16-Oct-74	$28,945.00	Human Resource
AC6463	Filipo Nairi	34	05-Nov-74	$21,680.00	Human Resource
AC8091	George Tomo	29	26-Apr-81	$33,610.00	Marketing
AD3214	Ema Lord	29	02-Jan-80	$20,400.00	Finance
AE1111	Paula Read	23	22-Sep-87	$19,350.00	Adminstration

i. Name and explain the appropriate data type for

ID: (1mk)

……

……

Age: (1mk)

……

……

Salary (1mk)

……

……

ii. Write a query to display details of employees working in the Administration department (3mks)

……

……

d) The function =AVERAGE (B2:B8) in cell B9 has been copied and pasted to cells C9 to K9 in spreadsheet.

i. What would be the formula at cell D9 (2mks)

……

……

……

ii. Explain the type of cell referencing used in the above formula (2mks)

PAPER 2

QUESTION ONE

a) Create a database in the compact disk named 'MAJENGO COLLEGE'. (2mks)

b) Create a table with the following fields using appropriate data types: Adm No, First Name, Last Name, Course, Date of admission and Completed. Save it as STUDENTS DETAILS. (8mks)

c) Set Adm No as a Primary key and the default value for the Date of Admission to reflect today's date. (2mks)

d) Create a Columnar form that would be used to enter data into STUDENT DETAILS and save it as STUDENTS DATA ENTRY. (3mks)

e) Use the above form to enter the following data into the database. (6mks)

Adm No.	First name	Last name	course	DOA	Completed
3224	John	Flora	IMIS	12/01/2010	Yes
4455	Mary	Mutua	Accounts	24/12/2009	Yes
6677	Benard	Maingi	French	15/5/2010	No
7760	David	Naja	IMIS	10/04/2010	No
2312	Evy	Danson	French	23/8/2009	Yes
6547	Joy	Kelly	IMIS	4/3/2010	No
6579	Mwangi	sam	IMIS	18/4/2010	No

f) Create a table named 'FEE PAYMENT' in the same database to contain Adm No, Fee Paid and Receipt No. (5mks)

g) Link STUDENTS DETAILS table to FEE PAYMENT table. (2mks)

h) Enter the following details directly into the FEE PAYMENT table (2mks)

Adm No.	Fee paid	Receipt number
3224	12000	100
4455	30000	121
6677	30000	152
7760	25000	134
2312	30000	145
6547	23000	124
6579	30000	150

i) Create a query to display the following details: Adm No, First Name, Last Name, Fee Paid. Save as FEE PAID. (5mks)

j) Display a list showing the last name and Fee balance for all students who owe the college over 10000 given that the total fees for each course is 30000. Save as SEND HOME. (5mks)

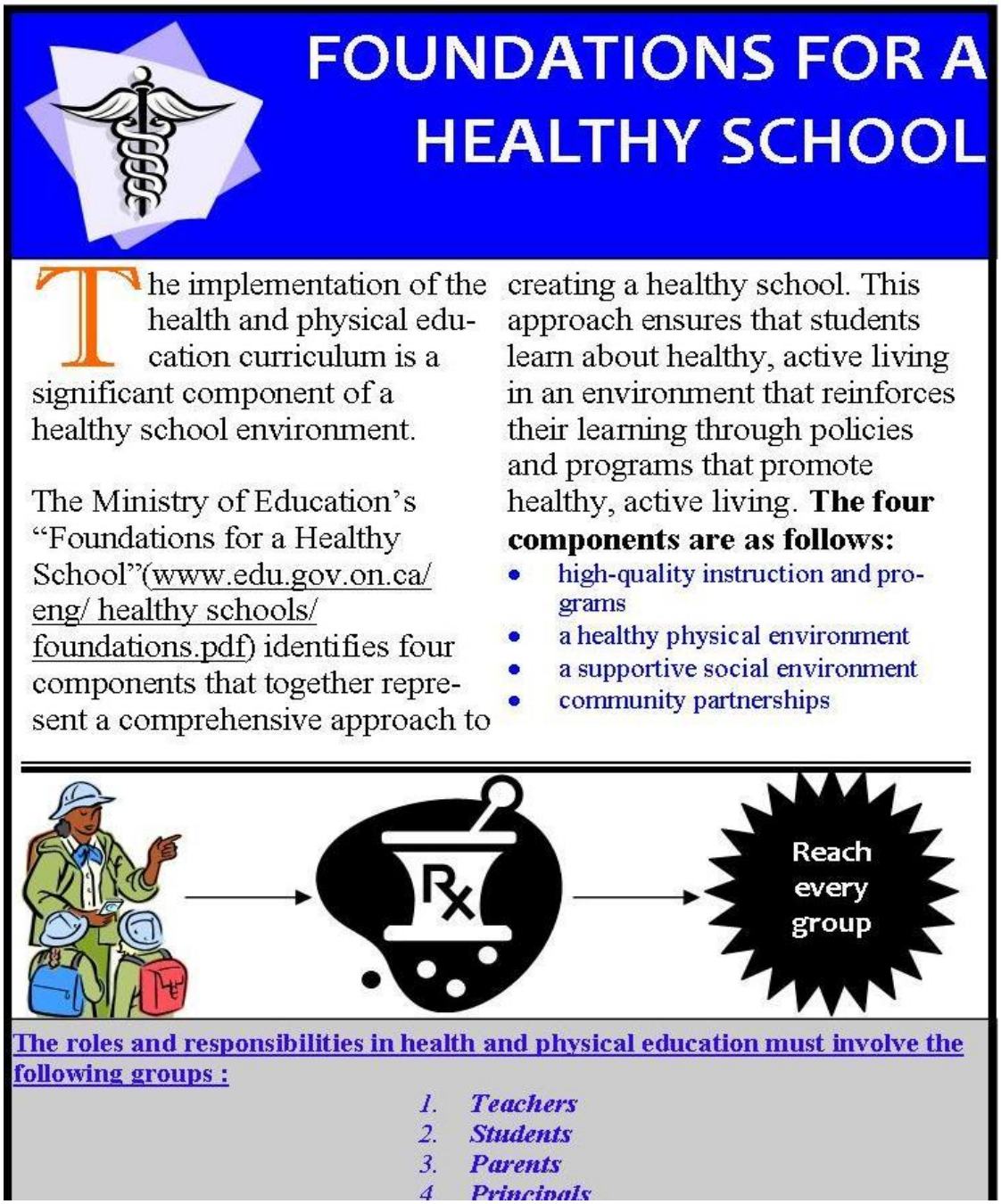
k) Certificates are to be given only those who have completed their course and have paid the full amount. Create a query, having the Adm No, First Name, Last name and course for all students to be awarded the certificates. Save as GRADUANTS. (5mks)

l) Prepare reports for STUDENTS DETAILS, FEE PAYMENT, FEE PAID, SEND HOME and GRADUANTS. (5mks)

m) Print the reports in (l) above. (5mks)

QUESTION 2

(a) Using Desktop Publishing application program, design the following publication. Name the file as HEALTHY_EDITION (19Marks)



(b) Prepare the page layout out as follows:

(i) Custom paper size: Width = 11.6", Height = 8.268'' (2Marks)

(ii) Set the margins to 0.787" all round (2Marks)

(iii) Divide the page into TWO equal horizontal parts using a ruler guide. (2Marks)

(iv) The border of the design should start from the set margins (2Marks)

NB: After designing one part of the divided page, TWO copies of the publication should fit into one page in landscape as set up above.

(c) Create a logo as shown to measure **height** 1.213" and **width** 1.118" (3Marks)

(d) (i) The main title text (near the logo) should be of **Candara, Font size 26, Bold and Right aligned** (4Marks)

(ii) Set-up the rectangular object with the main heading to a background color of **Accent 1** (1Mark)

(e) The text on the lower part of the publication should be formatted as follows: (3Marks)

- Color: **Custom color combination (Red=51, Green=4, blue=252)**
- Alignment: **Left**
- Font: **Size 10**

(f) Format all other text to **times new roman font type** and **font size 12** (2Marks)

(g) Apply a style to the line below the text in columns and a thickness of 4.5" in weight . (1Mark)

(h) Enforce hyphenations to the text in columns. (1Mark)

(i) The star object with text "Reach every group" should be a 24-point star. Format the text inside to font type **Calibri.** (2Marks)

(j) Make the designs to fit in one page (1Mark)

(k) Group all objects in the two designs as one. (2Marks)

(l) Insert a footer using your name, index number, aligned to the center (2Marks)

(m) Print the publication. (1Mark)

KCSE REPLICA 7
PAPER 1

1 . Define the following web related terms (3mks)

(i) Web browser.

……

……

(ii) Hyperlink

……

……

(ii) Hypertext document

……

……

2. Define the following computer crimes (2mks)

(i) Piracy

……

……

(ii) Industrial espionage

……

……

3. Differentiate between the following terms as used in word processing (3mks)

(a) Drop cap and case

……

……

(b) Superscript and subscript

……

……

(c) Indent and tab

……

……

4. Distinguish between RAM and ROM as used in computer system. (1mk)

……

……

5. Differentiate between a switch and a router in networking (**2mrks)**

……

……

……

6. State two advantages of output displayed on the screen over the printed output on paper. (2 marks)

……

……

……

……

1. Give **THREE** reasons why dust is the main threat to computer safety in the laboratory. (3 marks)

……

……

……

……
……

2. . Study section of word processing document below and identify any six formatting features used. (3mrks)

Information Communication Technology (ICT) Sector In Baringo County. 1st Of Its Kind.

Information Communication technology (ICT), plays a significant role in the development of Baringo County and contributes to over 60% of the Kenya's Economy. In this digital era, Baringo County prides itself of a number of globally competitive ICT firms and local startup computer institutions.

The ICT sector is in the process of developing integrated systems to run all the County's affairs, which include and not limited to; fleet management, Revenue collection, e-staff management-records management, among others. This will help fast track daily operations for quick decision making. The County's website *www.baringo.go.ke* is up and running.

All departments are giving information on their current developments to be posted on the website. The ICT center which has been set up at kabamet with the support of World Best Friends(WBF) and Korean International Cooperation

Flagship[1] Projects in the ICT sector.

- ✓ Networking of Baringo County Government offices (structured cabling)
- ✓ Installation of CCTV cameras/security systems

1. Command to expand the territory

i. ……
ii. ……..
iii. ……
iv. ……..
v. ……
vi. ……..

3. Using a well labeled diagram, describe the data processing cycle. (3 Marks)

4. A warranty is an agreement between the buyer and the seller. It spells out terms and conditions after selling a product in case of failure or malfunction. Describe any three basic requirements a good warranty should cover. (3marks)

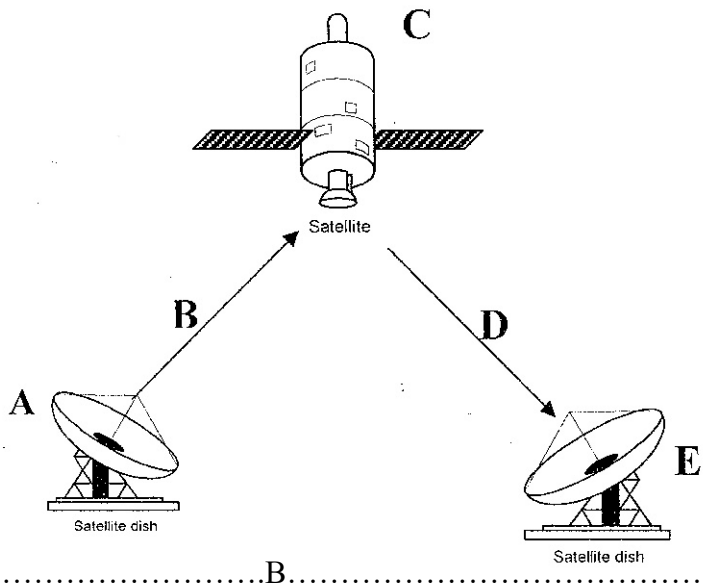
……
……
……
……
……

5. Briefly explain any three application areas of ICT (Information and Communication Technology) (3mks)

……
……
……
……

6. Name six steps in program development cycle in their logical sequence. (3mks)

7. Name the parts labeled A, B, C and D in the diagram below. (2mks)



A……B……..C……
……
D……

14. Write these abbreviations in full text (3mks)

(i)
BCD……
……..

(ii)
EBCDIC……
……

(iii) ASCII
……

15. Explain characteristics of a system

(i) Environment (2mks)
……
……
……

(ii) System entropy (2mks)
……
……

SECTION B (60marks)

Question 16 is compulsory. Answer any other three questions from this section

16. . Dynamic Help Group (D.H.G) pays 5% interest on shares exceeding 100,000 shillings and 3% on shares that do not meet this target .However no interest is paid on deposits in the member's D.H.G bank account.

Design

(a) An algorithm for the program that would (7mks)

(i) Prompt the user for shares and deposit of a particular member.

(ii) Calculate the interest and total savings.

-the interest and total savings on the screen for a particular member of the society.

(b) Using a flow chart. (8mks)

17. a) Explain how an operating system controls I/O devices. (2marks)

.....

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.....

.....

b) Distinguish between data verification and data validation. (2mks

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.....

c) Distinguish between Indexed sequential and direct file organizations (2marks)

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d) i) Highlight any three methods of data processing as used in computing. (3marks)

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.....

ii) State one benefit and one limitation of electronic processing. (2marks)

.....

.....

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.....

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) Convert $91C_{16}$ to Decimal (3mks)

b) Perform the following binary arithmetic calculations giving the answers in decimal notations (2mks)

1. $1110.01111_2+11010001.011_2$

2. $1001011.011_2+111.111_2$

c) Using two's compliment, subtract 8 from 15 in binary form, give the answer in decimal notation. (4mks)

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

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

19. a) Define the term Data communication (1 mark)

.....

.....

b) Describe the following items as used in data communication (3 marks)

i) Data signal

ii) Multiplexing

.....

.....

iii) Attenuation

.....

.....

a) Outline any two purpose of Networking (2 marks)

.....

b) State two advantages of twisted pair cabling (2 marks)

.....

c) i) With the aid of a diagram, differentiate between star topology and bus topology as used in networking. (4 marks)

ii) Give **Three** ways in which one would curb threat to data integrity (3mks)

……

……

20. a) Highlight any four factors to consider when setting up a computer laboratory. (2mrks)

……

……

b) Describe three ways in which computers have positively impacted on education. (3 mks)

……

……

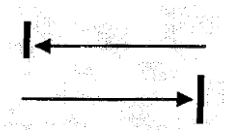
……

C. Name and explain the function of the following key symbols.

(i) (2mks)

(ii) (2mks)

(iii) (2mks)



d) Explain the meaning of the following terms

i) Encryption (1mk)

ii) Eavesdropping (1mk)

PAPER 2

	A	B	C	D	E	F	G	H	I
1	**Name**	**English**	**kiswahili**	**maths**	**Biology**	**pyhsics**	**C/Studies**	**Total**	**Average**
2	Sally	60	76	42	76	66	77		
3	Jane	56	45	53	65	45	72		
4	Philip	65	58	47	64	65	46		
5	George	56	66	30	85	48	60		
6	Mary	74	68	59	83	36	57		
7	James	80	72	45	74	54	70		
8	Tina	78	55	37	71	63	56		
9	Subject average								

1.(a) Create and enter the data as in the following spreadsheet for form3N students in Bright Star School in Baringo County and save it as BSSBC.(14marks)

Using the above information,

(b)Enter appropriate formulas to compute the Average mark in each subject (3 marks)

(c)Enter the total marks for each student (3 marks)

(d)Enter the Average marks for each student (3 marks)

(e) Format the table as follows:

. Set the direction of the labels to 45 degrees (2marks)

.Centre vertically all the records (2 marks)

(f)Create an embedded bar chart for average mark per subject (8 marks)

(g) Add a column of marks for Chemistry and enter the following data for each student: 78,56,67,81,72,68,53 starting from Sally down to Tina (4 marks)

(h)Filter the data using the Biology column and display only those rows with marks less than 80 (6 marks)

(i) Rank the students starting from those with the highest total mark (3 marks)

(j) Print the worksheet, and the graph (2 marks)

KCSE REPLICA 8
PAPER 1

SECTION A (40 MKS)
Answer all questions in this section.

1. State the software technological differences between the second generation and the third generation computers [2 marks]

2. State **two** ways of ensuring proper ventilation in a computer room [2 marks]

3. Convert the decimal number 20.375 to it binary number system equivalent [3 marks]

4. Pat has installed internet in his home computer in order to use it for browsing. State three ways in which he would prevent viruses from infecting the computer. [3 marks]

5. State **three** ways of transforming a picture embedded in a Desktop Publishing programme in order to fit in a designated space on a computer. [3 marks]

6. Distinguish between a line printer and a page printer as used in computers. [2 marks]

7. Describe virtual reality as used in computers. [2 marks]

8. State the function of each of the following features of an email software
   a) Inbox [1 mark]

   b) Draft [1 marks]

9. a) Explain the term toggle key as used in computer keyboard [2 marks]

   b) List two examples of toggle keys on a keyboard [2 marks]

10. State the type of error that would occur in data processing for each of the following cases:
a) Entering the number 315 instead of 351 [1 marks]

b) Entering the text "Kwys" instead of "Keys" [1 mark]

11. State **four** factors to consider when selecting an input device for use in a computer room. [4 marks]

12. State **three** functions of Un-Interruptible Power Supply (UPS) [3 marks]

13. Distinguish between a page break and a column break as used in a word processor. [3 marks]

14. State **three** factors to consider when selecting an operating system to install in a computer. [3 marks]

15. Differentiate between analogue signal and digital signal as used in computers. [2 marks]

SECTION B (60 marks)
Answer ALL questions from this section in the spaces provided.

16. a) Explain the term dry running as used in program development. [2 marks]

b) Describe **three** properties of an algorithm. [3 marks]

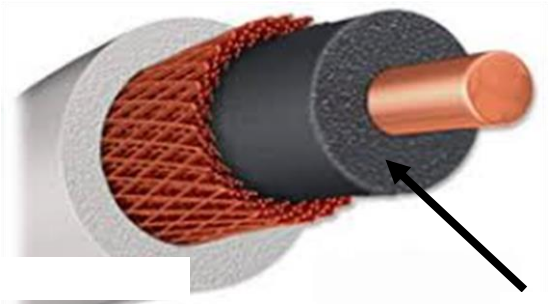
c) Write an algorithm using both pseudocode and flow chart to print the sum and average of numbers from 1 to n where n is provided by user and n>=1. [10 marks]

17. a) State **four** outcomes that may result from using incorrect requirement specifications during system development. [4 marks]

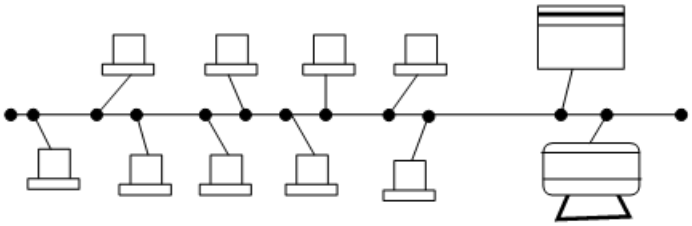
b) A school opted to use direct change over approach when installing a new system. Explain three challenges that the school may face as a result of this approach. [6 marks]

c) State **three** reasons that may lead an organization to install an intranet. [3 marks]

d) The figure below shows a coaxial cable. State the function of the part labelled A. [2 marks]



18. Use the figure below to answer the questions that follow:



a) Give

b) State three disadvantages of the above topology [3 marks]

c) A publisher intends to use a desktop publishing programme to create a publication which is to have many graphics. State three ways in which the graphics may be acquired for this purpose. [3 marks]

d) Interpret each of the following spreadsheet formula:

i) =count if (D2:D9,”>” B4) [2 marks]

ii) =sumif (B3:B11,”4M”, D3:D11) [2 marks]

e) i) The following are the fields of products table in a database created to store records of products manufactured in factory:

- Product number
- Product name
- Price
- Product description

I. State the appropriate data type for each field [4 marks]

19. a) Explain **three** features of a graphical user interface as used in computers. [6 marks]

b) State the function of each of the following computer keyboard keys:

i) Caps Lock [1 mark]

ii) Shift [1 mark]

iii) Home [1 mark]

c) Using two's complement notation, determine the value of the operation $25_{10} - 29_{10}$. [6 marks]

20. a) Distinguish between a computer drive and computer driver. [2 marks]

b) State **two peripheral** devices connected to the computer via PS/2 [1 mark]

c) Jane encountered desktop computer with the following features

- 3.0 USB ports
- 4.0 GB primary storage
- 19" TFT VDU
- 500 SATA HDD
- Linux 7.1
- AVG antivirus

i) Give 3 reasons for wide use of USB gadgets in the society today. [3 marks]

ii) What is the meaning of the following specifications:

i. *4.0 GB primary storage* [1 mark]

ii. *19" TFT VDU* [1 mark]

iii. *500 SATA HDD* [1 mark]

iv. *Linux 7.1* [1 mark]

iii) Give **three factors** to consider when selecting an **OS** to install in your computer. [3 marks]

iv). Describe **two symptoms** of a computer infected by virus. [2 marks]

PAPER 2

QUESTION 1 - SPREADSHEET

A Company in Mombasa sells computer spare parts to its customers. The Company wishes to work out the pay details for its employees.

EMPLOYEE NAME	YEARS WORKED	BASIC PAY [KSHS]	DEPARTMENT	SALES [KSHS]	HOURS OF OVERTIME
RUKENYA KWENA	5	24,000	ADMIN	16,000	10
BILLY LUCAS	13	28,000	SALES	25,000	11
LILIAN OKOTH	7	17,000	MARKETING	22,000	12
EVANS ONDIEKI	11	18,000	SALES	12,000	15
GEOFFREY MUTUMA	15	26,000	ACCOUNTS	11,000	22
HUMPHREY LOKI	10	25,000	ADMIN	30,000	12
CEDRIC MUKUI	11	19,000	SALES	35,000	33
FREDRICK CHEGE	15	25,000	MARKETTING	14,000	14
OSMAN HUSSEIN	14	23,000	ADMIN	25,000	0
JEREMY NYAMU	18	27,000	ACCOUNT	14,000	7

(a) Using the information above, design a spreadsheet and enter the given data as it appears. Give it the title "COMPANY PAYMENTS". Save the workbook file as **COMPANY1** (14marks)

(b) (i) Copy the data into Sheet 2 and rename it as **COMPANY2** and use it to answer the questions that follow (2 marks)

(ii) Calculate the total sales and total mileage giving them an appropriate label (2marks)

(iii) Rotate the column headings to 45° (2 marks)

(iv) The employee's sales commission is calculated as 12% of the employee's sales. Input this commission rate in cell C20 and label it appropriately. Bold the label and change its font to size 16 (4marks)

(v) Insert a new column labeled '**Sales commission**' between 'sales' and 'hours of overtime'. (2marks)

(vi) Create a formulae to give the amount of sales commission for each employee by making references to sales commission cell. (3marks)

(c) (i) Convert the basic pay and sales to two decimal places. (2marks)

(ii) Use a function in a new column labeled REMARK to put the remark 'EXCELLENT' for only those employees whose sales is greater than 22,000, 'GOOD' those employees whose sales are between 15000 to 21999 otherwise the remark should be 'LOW SALES. (6marks)

(iii) Apply both outline and inside double line border to the worksheet portion with data (3marks)

(d) Overtime payment is done by multiplying 5% of sales with the hours worked. Use a formula to calculate the overtime pay for each of the employees in a new column labeled "OVERTIME PAY" (2marks)

(e) Use a function to compute the Total payment of each employee. It should be summation of Basic pay, Sales Commission and Overtime pay. Give it the heading TOTAL PAYMENT. Save the changes. (2marks)

(f) Use an appropriate subtotals function to show how much TOTAL PAYMENT the company gives to employees in each department (4marks)

(g) Print **COMPANY1, COMPANY2** and **all the formulas used in company2.** (3marks)

QUESTION 2 - DATABASES

Assuming that you have been approached by an automobile Showroom company to help manage their vehicles database whose details are given below:

(a) Create database named **Magari** (2marks)

Car Make	RegNo	Type	Year	Value	Owner ID	Owner Name
Toyota	KBD 949U	Coupe	2010	1,200,000	M0001	Faith N.
Nissan	KCT 149E	Wagon	2014	2,500,000	M0002	Jacob W.
Izuzu	KDD 977W	Troupe	2016	4,500,000	M0003	Dan C.
Toyota	KBA 241V	Troupe	2009	900,000	M0002	Jacob W.
Toyota	KBD 049X	Coupe	2010	1,150,000	M0004	Rachael R.
Nissan	KCV 518C	Saloon	2012	1,700,000	M0004	Rachel R.
Subaru	KCY 123Z	Saloon	2014	2,100,000	M0001	Faith N.

(b) Design two Tables named **Cars** and **Owners** to be used to hold the above data. Assign appropriate primary keys for each table. Prepare appropriate input masks to help validate both RegNo and Owner ID field entries (18marks)

(c) Create a relationship between the tables. (2marks)

(d) Create forms named "**CarDetails**" with a heading and "**OwnerDetails**". Use them to add car details and owner details records respectfully. (4marks)

(e) Insert the record below having the following respective details. (4marks)

Volkswagen	KCV 321D	Beatle	2012	1,325,000	0002	Jacob W.

(f) Add a column into the car table labeled "Date of Service", and add the following dates. Save the changes made. (4marks)

Date of Service	OwnerID
20/092021	M0001
21/10/2021	M0002
10/10/2021	M0003
11/10/2021	M0002
19/11/2021	M0004
21/10/2021	M0004
22/11/2021	M0001

(g) Create a query that retrieves a list of cars and their owners to be serviced on 21/10/2021 or on 22/11/2021. Name it **Service Query.** (5marks)

(h) Create a tabular report named **NumbOfCars** displaying the cars and their owners; indicating the number of cars each owner has; sort the records with Name in ascending order. (6marks)

(i) Create a report named **TotalValue Report** that computes and displays the total value of the cars owned by each owner. (5marks)

(j) Print

(i) The two tables

(ii) The query

(ii) The two reports

KCSE REPLICA 9
PAPER 1

SECTION A (40 marks)

*Answer **ALL** the questions in the section in the spaces provided.*

1) Describe the following **input/output** terms as used in computer systems. Give an example for each (3marks)

a) Read

……

……

b) Write

……

……

2) Using relevant examples distinguish between a formula and function. (3marks)

……

……

……

3) A publisher intends to use a desktop publishing programme to create a publication which is to have many graphics. State three ways in which the graphics may be acquired for this purpose. (3 marks)

……

……

……

4. The management of an organisation intends to purchase a printer. State three factors that they should consider during the purchase (3 marks)

……

……

……

5. State three reasons why it is important to define data types of fields in a database correctly. (3 marks)

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……

6. An engineering company requires a computer system to design roads and bridges. (2 marks)
Explain one suitable choice for:

(i) output device;

……

……

(ii) software.

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7. State three circumstances under which the use of wireless communication would be preferred in data communication. (3 marks)

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8. Headache, back and neck pain may result from the use of computers. State how each of them can be minimized (2 marks)

(a)Headache

……
……

(b) Back & Neck Pain
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……

9. Explain the importance of each of the following in word processing:
(i) tab stops; (2 marks)
……
……

(ii) Section breaks. (2 marks)
……
……

10. State three problems associated with using e-mail technology for communication (3 marks)
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……

11. State two ways in which each of the following can be prevented
(a) Software errors (1 mark)
……
……

(b) Computer fraud (1 mark)
……
……

12. Differentiate between analogue data and digital data as used in computers (2 marks)
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13. State four properties that an operating system displays about a file (2 marks)
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……
……

14. State the functions of each of the following keys on the computer keyboard (2 marks)
(a) backspace;
……
……

(b) insert (ins)
……
……

15. Give three file organization methods in a computer (3 marks)
……
……
……

SECTION B (60 Marks)

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

16.(a) State three ways in which a programmer can make program code easy to fol1ow (3 marks)

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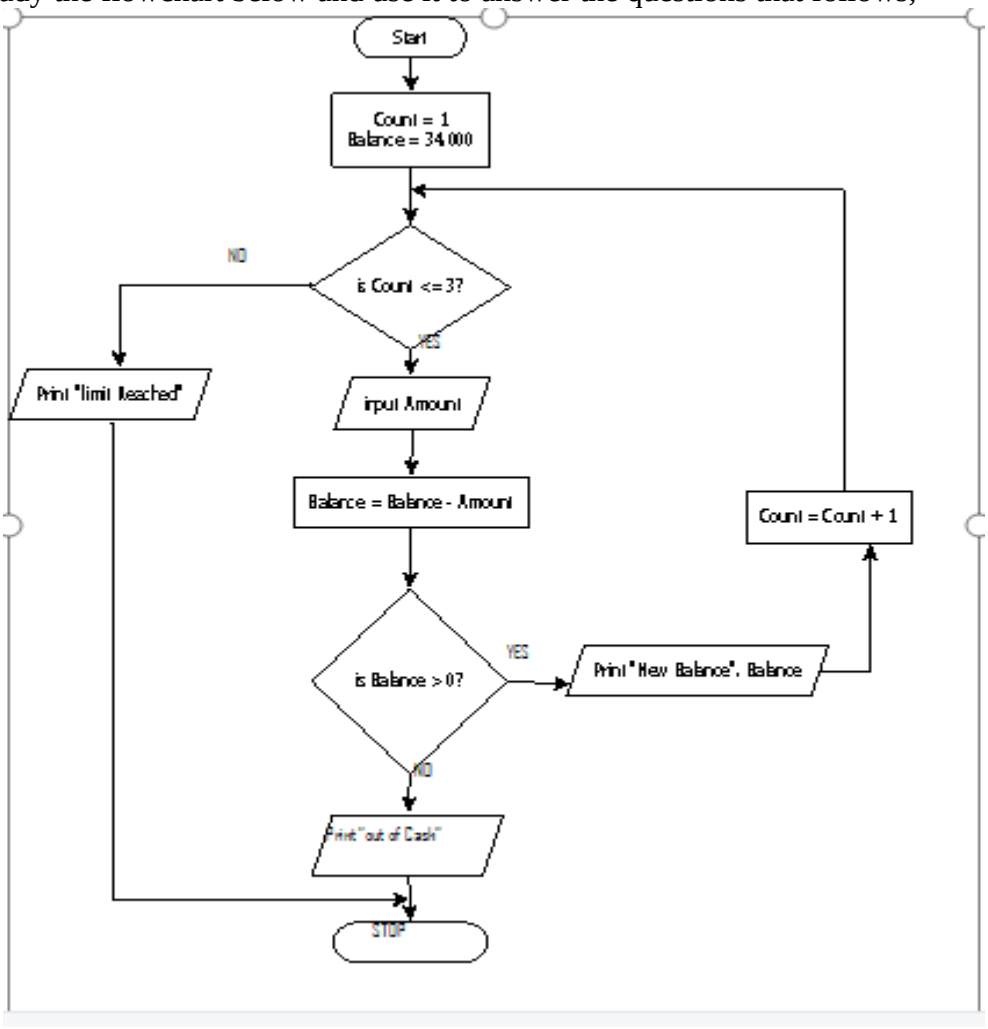
(b) Study the flowchart below and use it to answer the questions that follows;



(i) State the output of the above program flowchart for the inputs given below (3 Marks)
Amount = 15,000, 14,000 and 23,000 respectively

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(ii) State the purpose of the flowchart (1 Mark)

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(iii) Write a pseudocode for the flowchart in question (16. c) above (8 Marks)

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17. (a) Interpret each of the following spreadsheet formula:

(i) = countif(A2:A9, ">=E7") (2 marks)

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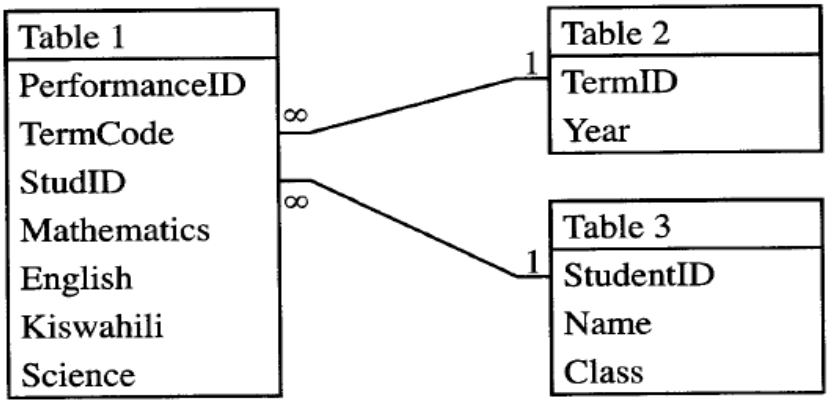
……

(ii) =sumif(B2 :B10, "WP", D3 :D11) (2 marks)

……

……

(b) The figure below shows relationships between tables in a database.



Identify two primary and two foreign keys used in the relationship. (4 marks)

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c)(i) Convert the hexadecimal number $C7D_{16}$ to its equivalent decimal number (2 Marks)

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……

(ii) Using the twos compliment and 8-bit notation subtract 27 from 12 leaving your answer in binary notation (5 Marks)

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18. (a) Explain three circumstances under which observation method may be preferred during data collection (6 marks)

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(b) Describe each of the following types of maintenance

(i) Perfective; (2 marks)

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……

(ii) Corrective; (2 marks)

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……

(iii) Adaptive. (2 marks)

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……

(c) Name three approaches that may be used to replace an old system with a new computerized system (3 marks)

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19. (a) With the aid of a diagram, describe the time sharing mode in computer data processing (5 marks)

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(b) A company's management has opted to use computers to process data. State four factors that the management needs to consider when selecting the company data processing mode. (4 marks)

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……

(c) Describe each of the following validation checks as used in data processing

(i) Preserve check (2 marks)

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……

(ii) Data type check (2 marks)

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……

(iii) Check digit (2 marks)

……

20. (a)State the function of each of the following

(a) Network Interface Card (1 mark)

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……

(b) Modem (1 mark)

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……

(c) Repeater (1 mark)

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(d) Crimping tool (1 mark)

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(b) State any two reasons why the fibre optic cable is preferred for data transmission over the other cables (2 marks)

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(c) State three functions of networking operating systems other than providing network security. (3 marks)

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(d) A company has three branches X, Y and Z where X is the headquarter. The local area network (LAN) at X is directly connected to the LAN at Y and directly to the LAN at Z. Explain two benefits of having the LAN at Y also directly connected to the LAN at Z. (4 marks)

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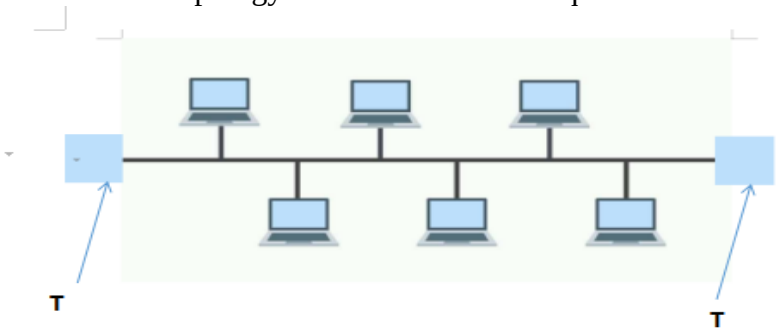
(e) The figure below shows a network topology . use it to answer the questions that follows:



(i) What is the name of the topology? (1 mark)

……

……

(ii) What is the work of the part labelled T. (1 mark)

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KCSE REPLICA 10
PAPER 1

Section A (40 marks)
Answer all questions in this section on the spaces provided.

1 Why must food and beverages be kept out of the computer lab? ***[2 marks]***

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……

2 State two key technological developments that occurred during the third generation of computers ***[2 marks]***

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3 a) What are toggle keys in relation to keyboards? ***[1 marks]***

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b) What type of keyboard would you prefer for the following and why? ***[4 marks]***

i) Visually impaired users

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……

ii) Busy restaurant

……
……

4 State two differences between buffers and registers ***[4 marks]***

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5 As a computer expert, you were approached by certain organization to help them secure some computers they require. You were keen at certain considerations based on the knowledge you have in computing. What would the following considerations imply? ***[3 marks]***

i) Software Authenticity

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……

ii) Multi-media capability

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……

iii) Software portability

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6 During class discussion, a Form One student was asked to present his findings on what Operating Systems perform in a computer. Explain four key points he will address. ***[4 marks]***

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7 a Differentiate between formula and function as used with spreadsheets. ***[2 marks]***

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8 a When working with database, one required to create relationship among the table structures. What is relationship in database? ***[2 marks]***

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b State **three** purpose of establishing relationship among tables. ***[3 marks]***

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9 Most spreadsheets usually accept certain type of data to be entered into the worksheets. Outline four types of these data. ***[2 marks]***

……
……

10 a Outline four benefits of using word processors over manual typewriters ***[2 marks]***

……
……

b Differentiate between the following

i. Merging and splitting cells in word processor table ***[2 marks]***

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……
……

ii. Data source and main document in mail merge ***[2 marks]***

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11 Why are system analysts referred to as change agents in an organization? ***[1 marks]***

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……

12 Why would one defragment his storage media? ***[1 marks]***

……
……

13 What is the meaning of the phrase 'syntax error' as used with computer programming? ***[1 marks]***

……
……

14 Why are repeaters necessary when setting up a large network? ***[1 marks]***

……
……

15 State one major reason why organizations are opting for telecommuting . ***[1 marks]***

……
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Section B (60 marks)
Answer question 16 and any other three questions

16 a State **two** distinct differences between compilers and interpreters. ***[2 marks]***

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……
……

b (i) Outline three demerits of using low level programming languages

…… ***[3 marks]***
……
……
……..

(ii) Differentiate between monolithic and modular programs ***[2 marks]***

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……
……

c Study the following statements and answer the questions that follow ***[7 marks]***

Start
Initialize x to 3 and y to 4
Count = 1
While Count <=10
Increment x by 1
Multiply y by 2 and subtract ½
Add x to y to attain z
Increase the value of Count by 2
Endwhile
Print the values for x, y and z
Stop

i) What does the above statements represents? ***[1 mark]***
……..
ii) What is the value for y and z ***[1 mark]***
……
ii) Implement the above statements using a program flowchart ***[6 marks]***

17 a Outline three ways +4 denary can be represented in a computer ***[3 marks]***

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b Use one's compliment to represent -6_{10} in 8-bits formation. ***[2 marks]***

c Briefly explain how data are represented on a floppy disk ***[2 marks]***

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d Differentiate between wavelength and frequency of a signal ***[2 marks]***

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……

e Describe each of the following computer terminologies as used in data representation ***[4 marks]***

i. Word
……
……

ii. Bit
……
……

iii. Byte
……
……

iv. Nibble
……
……

f Convert 9.625_{10} to binary ***[2 marks]***

18 i A school intends to network its computers in the computer laboratory. Outline three benefits that this would bring to the lab users ***[3 marks]***

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……
……
……

ii a) What is signal attenuation? ***[1 mark]***

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……

b) State **three** advantages unbounded media ***[3 marks]***

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iii Network servers run a special type of operating system. State four key functions that this kind of operating system perform ***[4 marks]***

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iv International Organization for Standardization, ISO developed Open System Interconnection, OSI reference model to help in developing network protocols. State the first four layers of this model. ***[4 marks]***

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19 Otieno was tasked with entering marks for a certain exam that was done by an entire class.

a State two types of errors he is likely to encounter during this exercise ***[2 marks]***
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……
……

b How can the above identified errors be avoided? ***[1 mark]***

……
……

c Other than the errors identified above, list two other errors that can be encountered during data processing ***[1 mark]***

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.....

d i. A certain research institution had his staff collect data from the field. The collected data are then surrendered to the central location where they are processed as a unit over a period of term. What processing mode is being used? ***[1 mark]***

……
……

ii. State one merit of this mode. ***[1 mark]***

……

e Describe data integrity. ***[1 mark]***

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……

f There are so many ways that can be used to reduce threat to data integrity. Mention any two ***[2 mark]***

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……

g Give the best file organization employed by Magnetic tapes and SD Cards. ***[2 mark]***

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……

h i. The school's LAN is done using UTP cable. List **two** advantages of using this type of cable. ***[2 mark]***

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……
……

ii. List **two** advantages of using fibre optic cable in networking ***[2 marks]***

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……

i Data flows in the school's LAN in a duplex manner. List **two** other modes of data transmission in a network ***[1 mark]***

……
……

20 a i. Outline **three** threats to data stored in a computer ***[3 mark]***

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

ii. Database design can take several forms depending on the user's needs. Explain two models that one can use ***[2 marks]***

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

b The following is a spreadsheet relating to a retailer. ***[2 marks]***

	A	B	C	D	E	F
1	**Item**	**Quantity**	**Unit Price**	**Total**	**Tax**	**Gross Total**
2	Suga	50	120			
3	Bread	41	75			
4	Margarine	39	250			
5	Diapers	103	25			
6						
7	Tax Rate	15%				

If the Tax Rate is applicable to all items listed, write a formula that can be entered in cell E2 and can be copied along the column to get the tax for other items

.....
.....

c i. Study the passage below ***[2 marks]***

Raila Amolo Odinga (born 7 January 1945) is a Kenyan politician who served as the Prime Minister of Kenya from 2008 to 2013. He is assumed as the Leader of Opposition in Kenya since 2013 as the New Constitution of Kenya does not prescribe for such a position. He was the Member of Parliament (MP) for Langata from 1992 to 2007. Raila Odinga served in the Cabinet of Kenya as Minister for Energy from 2001 to 2002, and as the Minister for Roads, ~~Public Works and Housing~~ from 2003 to 2005. Odinga was appointed High Representative for Infrastructure Development at the African Union Commission in 2018.

Outline four formatting styles that have been applied to the passage

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

d List **three** career opportunities in the field of ICT. ***[3 marks]***

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

e Outline **three** services offered on the internet. ***[3 marks]***

PAPER 2

1. (a) Using a Word Processing package, type the congratulatory note below as it appears and save it as CONGRATS. (15mks)

MAGS Software Co. Ltd
P.O. Box 5678
Kericho
(Insert today's date)

<<First Name>><<Last Name>>
<<Address>>
Dear**<<First Name>>**

RE: CONGRATULATIONS

Due to your hard work and sacrifices you made this year, the company wishes to congratulate you for emerging the best in our internal interview that you applied for. Your new position will be **<<Position>>** and your new salary scale will be**<<Amount>>.**

Yours faithfully,

Gregory Bruce
PERSONNEL

(b) Create a data source with the following details and use it with the note you have just typed to generate personal notes to the company's named personnel. Save it as Details. (15mks)

George Kinoti P. O. BOX 5678 Kericho Software Developer Ksh.125000	Wilberforce Kenya P. O. BOX 5678 Kisumu ICT Officer Ksh.125000	Henry Odongo P. O. BOX 5678 Kilgoris Database Admin Ksh.125000
Grace Akinyi P.O. BOX 5678 Nakuru System Admin Ksh.120000	Beth Mugo P. O. BOX 5678 Migori Secretary Shs.30000	SharonWangoi P. O. BOX 5678 Nandi-Hills Accountant Shs.45000

(c) Insert data fields in main document and generate the notes for the employees.(14mks)

(d) Print the notes. (6mks)

2. (a) Create a database called **SCHOOL**. (2 Marks)
(b) Create three tables **EXAMINATION**, **DOS** and **BOARDING**with the fields as shown below. (10Marks)
(c). Create a relationship between the three tables and enforce integrity. (6Marks)
(d). Enter the data items in the given tables three tables. (15Marks)

EXAMINATIONS

Admission Number	Mathematics	English	Kiswahili	Biology
1	45	67	90	23
10	45	89	90	20
2	45	70	80	45
3	89	90	90	20
4	78	9	90	50
5	67	89	60	90
6	67	90	7	80
7	34	78	70	90
8	23	50	38	90
9	23	15	67	20

DOS

Admission Number	SName	Other Names	KCPEMark	Year of KCPE
1	PETER	BARASA	327	2007
10	JOHNSON	SUK	250	2001
2	ALEX	OJWANG’	340	1998
3	BELINDA	ESTHER	250	2008
4	BRAMWEL	RAYMOND	450	2007
5	ALEX	WAMWANA	410	2003
6	JANET	KILONZO	400	2000
7	MATHEW	KARIUKI	450	1999
8	NASIMIYU	CATHEEN	290	2003
9	KIMATHI	JOHN	3000	2001

BOARDING

Admission Number	UNIFORM	TOOL	TOOL NAME
1	No	12	JEMBE
10	Yes	20	JEMBE
2	No	11	PANGA
3	Yes	1	SLASHER
4	Yes	111	JEMBE
5	No	15	RAKE
6	Yes	22	BASIN

7	Yes	11	BROOMS
8	Yes	90	RAKE
9	Yes	23	BUCKET

(e) Design a query that would display the following fields as shown below and write down the formulae for getting the total score and criteria for extracting the records below (10 Marks)

ADMIN

Admission Number	UNIFORM	SName	KCPEMark	Mathematics	English	Kiswahili	TOTAL SCORE
1	Yes	BELINDA	250	89	90	90	269
10	Yes	BRAMWEL	450	78	9	90	177
2	Yes	JANET	400	67	90	7	164

(f) Design a report that would sort the following in ascending order in the order of the following fields, Total score, KCPE Score, SName the Admission Number and the report should display all the fields. Save the report as administration (5Marks)

(g) Print, administration and admin (2Marks**)**