KCSE 2025 TOP SCHOOLS MOCKS

COMPUTER STUDIES

(MOCK EXAMS 1-10)

To encourage academic excellence, top-performing national schools collaborate on the "National Schools" joint mock exam compilation. The goal of this collaborative effort is to push students and enhance their readiness for national exams through the use of challenging tests. The goal of participating schools' resource and strategy sharing is to raise student achievement and promote an achievement-focused culture.

KEY TO SUCCESS!

For Marking Schemes

Mr Isaboke 0746 222 000 / 0742 999 000

MWALIMU CONSULTANCY

KCSE 2025 TOP SCHOOLS MOCKS

NATIONAL TRIAL 1

451/1

COMPUTER STUDIES

PAPER 1

TIME: 2½ HOURS

NAME……

SCHOOL…… **SIGN**……

INDEX NO…… **ADM NO**……

Kenya Certificate of Secondary Education.

INSTRUCTION TO CANDIDATES

a) *Write your name and index number in the spaces provided above*

b) *This paper consists of* ***Two*** *sections* ***A*** *and* ***B***

c) *Answer* ***ALL*** *questions in section* ***A***

d) *Answer question 16 and any other* ***THREE*** *questions from section* ***B***

FOR EXAMINER'S USE ONLY

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

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 **(2 marks)**

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 **(3 marks)**

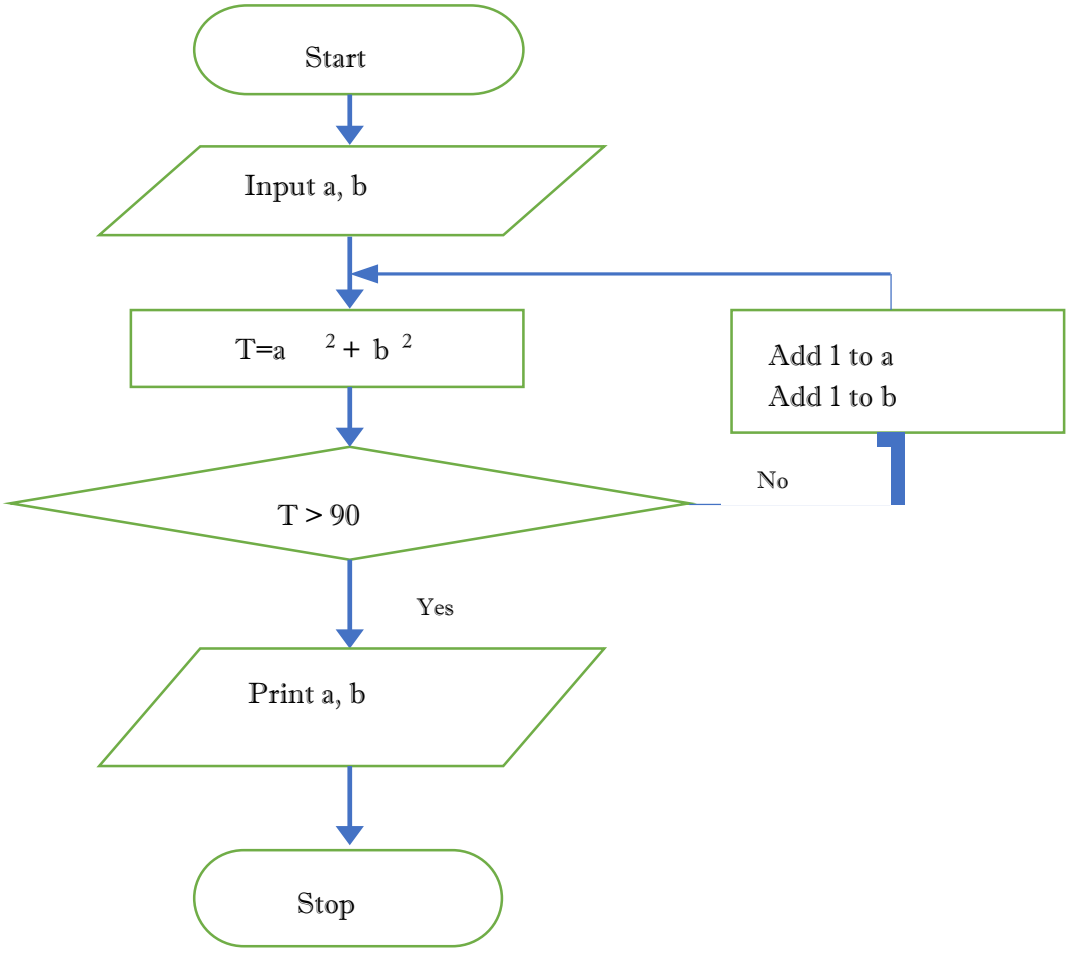
SECTION B (60 MARKS)

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.

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

(c) Convert the following numbers to binary number

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

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

(d) 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

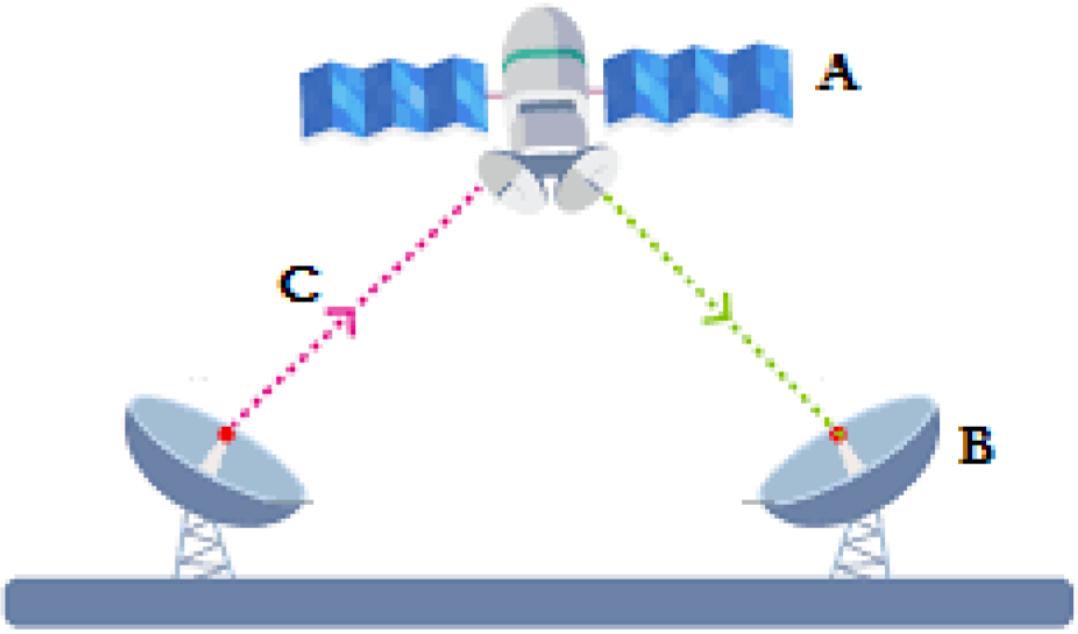
(ii) WhatsApp chat

(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)**

KCSE 2025 TOP SCHOOLS MOCKS

NATIONAL TRIAL 1

451/2

COMPUTER STUDIES

PAPER 2

TIME: 2½ HOURS

NAME……

SCHOOL…… **SIGN**……

INDEX NO…… **ADM NO**……

Kenya Certificate of Secondary Education.

451/2

COMPUTER STUDIES

Paper 2 (PRACTICAL)

INSTRUCTIONS TO CANDIDATES

a) *Indicate your name and index number at the right hand corner of each printout*
b) *Write your name and index number on the CD/removable storage medium provided*
c) *Write the name and version of the software used for each question attempted in the answer sheet provided*
d) *Answer all the questions*
e) *All questions carry equal marks*
f) *Passwords should not be used while saving in the CD/removable storage Medium*
g) *Marked printout of the answers on the sheet*
h) *Arrange your printouts and staple them together*
i) *Hand in all the printouts and the CD/removable storage medium used*
j) *All the work should be saved at the desktop of your computer in a folder named with our name and index number. All the work in your folder should be burned to the CD/WR provided*

QUESTION ONE (50 MARKS)

1. The following table contains details of Baharini Girls school

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

REQUIRED

a) Create a database file that can be used to store the above data. Name the file Baharini school database. **(2mks)**

b) Create Three tables, **student details**, **Accounts table** and **dormitory table** **(11mks)**

c) Format the following fields as follows:

a. House number to maximum of 3 characters. **(1mrk)**

b. Datae of birth as medium date **(1mrk)**

c. Fees pad and fees balance in Ksh. In two decimal points **(2mrks)**

d. House name of data type look up typed. **(1mrk)**

d) Create a relationship between the three tables **(3mks)**

e) Using appropriate forms, Enter the information given into the three tables **(15mks)**

f) Create a query for all students housed in Chui with their adm no and fee balance save as **Chui query** **(3mks)**

g) Design a "**current age query"** to display name, Fee paid and current ages of all the students **(5mks)**

h) Create a query **Last born** to display adm no of all the students who were born after 1999 and have paid more than 20,000. **(4mks)**

i) Create a report "**Hefty Balances"** showing students with fees balances and calculate total balance **(3mks)**

j) Print, The **Last born query, Hefty balance report** **(2mks)**

2. **QUESTION 2** *(50MARKS)*

Use a spreadsheet to manipulate data in the table below.

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

a) Enter the data in all bordered worksheet and fit all column. Save the workbook as **mark 1** **(16mks)**

b) Find the total marks for each subject **(2mks)**

c) Find total for each subject per stream using a function **(4mks)**

d) Find mean mark for each student using a function **(2mks)**

e) Rank mean student in descending order using the mean **(3mks)**

f) In cell B17 count the number of students with a mean mark of 70 and above**.** **(2mks)**

g) Create a column called Grade. Grade all the students based on the mean score as follows: greater than 70 “Distinction” Greater than 50 “Credit” Greater than 30 “Pass” else fail. **(3mks)**

h) Create a well labeled column chart on a different sheet to show the mean mark of every student. Rename the sheet as **mark 2.** **(5mks)**

i) Using **mark1,** use subtotals to find the average mark for each subject per stream. **(6mks)**

j) Copy the data in sheet 1 to sheet 3 and filter the data display only the students with distinction. **(3mks)**

k) Print **sheet 1,mark 2** and the **sheet 3** **(3mks)**

KCSE 2025 TOP SCHOOLS MOCKS

NATIONAL TRIAL 2

451/1

COMPUTER STUDIES

PAPER 1

TIME: 2½ HOURS

NAME……

SCHOOL…… **SIGN**……

INDEX NO…… **ADM NO**……

Kenya Certificate of Secondary Education.

INSTRUCTIONS TO CANDIDATES

- *Write your name and Index No in the spaces provided above.*
- *Sign and Write the date of the examination in the spaces provided above.*
- *This paper consists of two sections: A and B*
- *Answer all the questions in section A*
- *Answer question 16 and any other three questions from section B*
- *All answers must be written in the spaces provided on the question paper.*

For Examiner's Use Only

SECTION	QUESTION	CANDIDATE'S SCORE
A	1 – 15	
B	16	
	17	
	18	
	19	
	20	
	Total Score	

SECTION A

Answer all the questions

1. Identify three advantages of using computers in banking **(3mks)**

2. List three facilities that will ensure proper ventilation in a computer lab **(3mks)**

3. Give two main functions of a computer input device. **(2mks)**

4. What are turnaround documents? **(1mk)**

5. Using examples, distinguished between:

(i) Primary and secondary storage **(1mk)**

(ii) Fixed and removable disks **(1mk)**

6. Ann connected new multimedia speakers to her computer and tried to play her favorite music CD, but no sound came out. Suggest two problems that might have occurred **(2mks)**

7. Explain the following considerations when purchasing software **(2mks)**

(i) Authenticity

(ii) Portability

8. Give three ways in which operating systems are classified into **(3mks)**

9. Peter tried to retrieve a document file following all the steps correctly. The filename did not appear in file list box. State three causes for this. **(3mks)**

10. State the use of the following objects in databases. **(3mks)**

i) Tables

ii) Forms

iii) Query

11. i. Explain the meaning of the following as used in computer programming. **(2mks)**

a. Syntax

b. Semantic

ii. List three ways in which data integrity can be compromised. **(3mks)**

12. i. Mobile phones have become common ICT devices. Explain some of the powerful capabilities that come with some of the latest embedded operating systems **(3mks)**

ii. List two disadvantages of fiber optic cable over twisted wires**.** **(2mks)**

13. Describe any two types of data processing methods. **(2mks)**

14. State two advantages of USB port over the parallel port **(2mks)**

15. Differentiate between the terms signal Attenuation and Noise as used in data communication. **(2mks)**

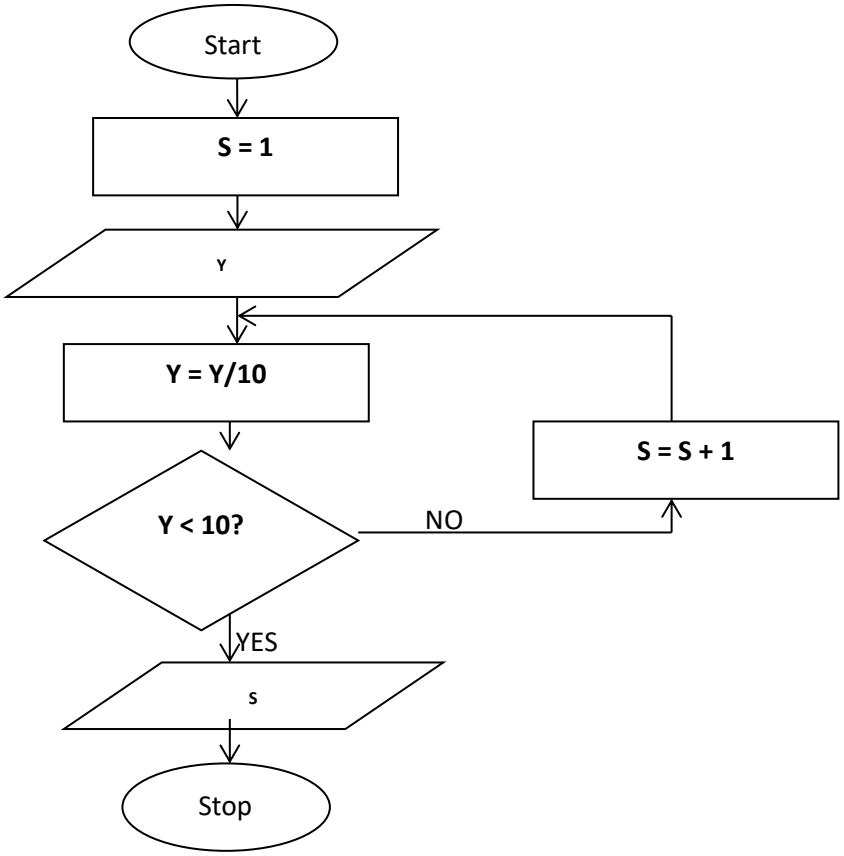
SECTION B

Answer question 16 and any other three questions in this section

16. a) State three advantages of low -level languages **(3mks)**

b) Give two differences between a compiler and an interpreter. **(2mks)**

c) i) Study this flowchart and use it to answer the questions that follow.



I. Give the expected output from the flowchart when the value of Y is:

(i) 48 **(1 marks)**

(ii) 9170 **(2 marks)**

(iii) – 800 **(2 marks)**

II. Write the pseudo code that can be used to create a program represented by the above Flowchart.

17. a. Use two complement to perform the following arithmetic operations

i) 15_{10} -12_{10} **(4mks)**

ii) 10111_2- 1011_2 **(3mks)**

b) 1011_2 is a ones complement binary representation of negative number using four bits work out the likely positive equivalent in base 10. **(4mks)**

c) Convert the decimal fraction 10.375_{10} into its binary equivalent **(3mks)**

Whole numbers

d) Assuming the existence of base five, list the numbers used in the number system **(1mk)**

18. a State and explain two disadvantages that will come about if a network was to be installed in your school. **(4mks)**

b) Discuss two disadvantages of wireless networks. **(4mks)**

c) Write the following abbreviation in full. **(2mks)**

i) F.T.P

ii) H.T.T.P

d) With the aid of a diagram, discuss Hybrid topology. **(4mks)**

e) Discuss four advantages of network. **(2mks)**

19. a) Explain why a computer is able to display the correct time and date when it has just been switched on. **(2mks)**

b) Discuss two types of special memories found in a Computer System. **(4mks)**

c) i) Define a Bus with reference to a computer system. **(1mk)**

ii) List two examples of buses. **(2mks)**

d) Distinguish between a power cable and interface cable. **(2mks)**

e) Differentiate between the different types of RAM. **(4mks)**

20. a) i) Define a system. **(1mk)**

ii) Explain system entropy. **(2mks)**

b) State three circumstances that can lead to development of information **systems** **(3mks)**

c) Distinguish parallel changes over from straight change over as used in system implementation. **(2mks)**

d) Discuss two fact finding methods. **(4mks)**

e) Differentiate an open system from a closed system. **(2mks)**

f) List two responsibilities of a system analyst. **(2mks)**

KCSE 2025 TOP SCHOOLS MOCKS

NATIONAL TRIAL 2

451/2

COMPUTER STUDIES

PAPER 2

TIME: 2½ HOURS

NAME……

SCHOOL…… **SIGN**……

INDEX NO…… **ADM NO**……

Kenya Certificate of Secondary Education.

INSTRUCTIONS TO CANDIDATES

1. *Write your name and index number at the top right hand corner of each print out.*
2. *Write your name and index number on the diskette.*
3. *Write the name and the version of the software used for each question attempted in the answer sheet.*
4. *Answer **ALL** the questions.*
5. *All questions carry equal marks.*
6. *Passwords **should NOT be used** while saving in the diskette.*
7. *All answers **MUST BE** saved in your diskette.*
8. *Make a print out of the answers on the answer sheets provided.*
9. *Arrange your printouts and tie/staple them together and use the best fit i.e. landscape or portrait for your printouts.*
10. *Hand in a folder with your name.*

QUESTIONS

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	Beth Mugo P. O. BOX 5678 Migori Secretary	SharonWangoi P. O. BOX 5678 Nandi-Hills Accountant

Ksh.120000 Shs.30000 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	**S Name**	**Other Names**	**KCPE Mark**	**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	KCPE Mark	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 thereport as administration **(5Marks)**

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

KCSE 2025 TOP SCHOOLS MOCKS

NATIONAL TRIAL 3

451/1

COMPUTER STUDIES

PAPER 1

TIME: 2½ HOURS

NAME……

SCHOOL…… **SIGN**……

INDEX NO…… **ADM NO**……

Kenya Certificate of Secondary Education.

INSTRUCTIONS TO CANDIDATES

- *Write your **name, School** and **index number** in the spaces provided above.*
- *This paper consists of Two sections **A & B***
- *Answer **ALL** the questions in Section **A***
- *Question 16 is compulsory*
- *Answer any **THREE** questions in section **B***

FOR EXAMINERS USE ONLY

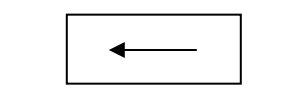
SECTION	QUESTION	MAXIMUM MARKS	CANDIDATES SCORE
A	1-15	40	
B	16	15	
	17	15	
	18	15	
	19	15	
	20	15	
TOTAL SCORE	100		

SECTION A (40 MARKS)

Answer all the questions in this section in the spaces provided

1. State any **two** peripheral devices that are powered by the system unit. **(1 mk)**

2. The following are symbols of some keys found on the keyboard. Name the keys represented by the symbols. **(2 mks)**



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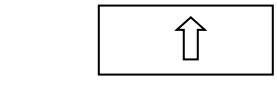

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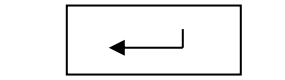

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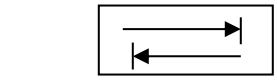


_____

3. Explain any **three** functions of system software in a computer **(3mks)**

4. As a computer student you have been asked to assist in buying an input device. State any **four** factors to consider when buying input devices. **(4mks)**

5. i. The arithmetic logic unit, the control unit and the main memory use electrical pathways or links called buses. State and explain the three types of buses. **(3mks)**

ii. What is the role of special purpose memories in the microprocessor? **(1 mk)**

6. Outline the **three** differences between primary memory and secondary memory.**(3mk)**

7. Citing relevant examples state **two** advantages of integrated software as opposed to single purpose. **(2mks)**

8. a. Define the term mail merging **(1 mk)**

b. Name **two** files that are created in mail merging process **(1mks)**

9. (a) Distinguish between a workbook and a worksheet as used in spreadsheets **(2mks)**

(b) What is the meaning of "what if analysis" with respect to spreadsheet? **(1mk)**

10. Define the following terms in relation to internet **(2 mks)**

i). Downloading

ii). Hyperlink

11. Benjos was instructed by his teacher while typing a Microsoft word document to replace all the occurrences of the word MS with Microsoft. Highlight the steps to do this **(3mks)**

12. What is the difference between logical and physical file? **(2mks)**

13. Explain any **three** types of computer processing files. **(6mks)**

14. Give a reason why HTML is not considered as a true programming language. **(1mk)**

15. (a) Define the following computer crimes

(i) Piracy **(1mk)**

(ii) Industrial espionage **(1mk)**

SECTION B (60 MARKS)

Answer questions 16 (COMPULSORY) and any other three questions in this section

16. (a) Draw a flowchart for a program that is to prompt for N numbers, accumulate the sum and them find the average. The output is the accumulated totals and the average. **(5 mks)**

(b) Write a pseudo code for the above program. **(4 mks)**

(c) Explain **three** types of control structures use in programming. **(3mks)**

17. (a) i. Subtract 110_2 from 11010_2 **(1mk)**

ii. Find the sum of binary number 101.101_2 and 110.100_2 **(1mk)**

(b) i. Convert binary number 11010110.1001_2 into octal number. **(1mk)**

ii. Convert binary number 11010110.1001_2 into hexadecimal number. **(1 mark)**

(c) Convert the following numbers to their decimal equivalent

i. 11.011_2 **(2 marks)**

ii. 0.11011_2 **(2 mrks)**

(d) i. Convert $3BD_{16}$ to Octal. **(3mks)**

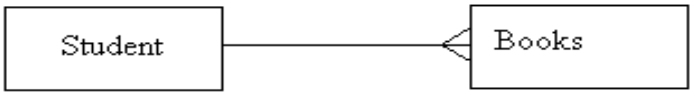
ii. Using one's complement, calculate $5_{10} - 9_{10}$. use six bit in your calculation. **(3mks)**

(e) State the following types of transcription errors: **(2 marks)**

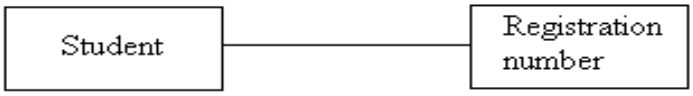
i. 3455 instead of 3456

ii. Simth instead of Smith

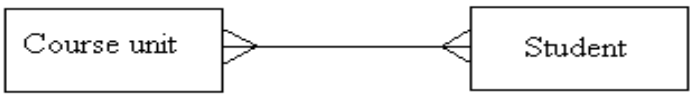
18. (a) State and explain the following types of relationship as used in database design

i. 

(2 marks)

ii. 

(2 marks)

iii. 

(2 marks)

(b) i. Explain the difference between primary key and an index key as used in database application **(2 marks)**

ii. Outline the functions of a primary key **(2 marks)**

(c) Describe the following types of database model

i. Network model **(2 marks)**

ii. Relational model **(2 marks)**

19. (a) i. What is an operating system? **(1 mark)**

ii. Maintaining security is one of the functions the operating system. Explain how the operating system maintains security **(2mks)**

iii. Explain how an operating system controls I/O devices. **(2mks)**

(b) What does the following control measures against computer crime involve? **(5 mks)**

i. Audit trail
ii. Data encryption
iii. Log files
iv. Passwords
v. Firewall

(c) Briefly explain what happen during power on self test (POST) **(3 mks)**

(d) Explain the functions of complementary metal-oxide semiconductor (CMOS) **(2 mks)**

20. **a)** State **two** advantages and two disadvantages of the ring network topology

Advantage **(2mks)**
Disadvantages **(2mks)**

b) State **two** roles and responsibilities of each of the following ICT professionals
i) Webmaster **(2mks)**
ii) Network Administrator **(2mks)**
iii) Computer scientists **(2mks)**
iv) System Administrator **(2mks)**
v) Software Engineer **(2mks)**

c) Explain the term accreditation as used in education **(1mk)**

KCSE 2025 TOP SCHOOLS MOCKS

NATIONAL TRIAL 3

451/2

COMPUTER STUDIES

PAPER 2

TIME: 2½ HOURS

NAME……

SCHOOL…… **SIGN**……

INDEX NO…… **ADM NO**……

Kenya Certificate of Secondary Education.

INSTRUCTIONS TO CANDIDATES

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

QUESTION ONE

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

MEMBER	NAME	DATE OF BIRTH	DATE OF APPLICATION	GENDER	AGE	AMOUNT APPLIED
A001	ABC	1/3/1992	1/1/2016	M		Ksh 200,000.0
B001	CDE	2/6/1999	3/1/2016	F		Ksh 600,000.0
C008	FGH	5/6/1992	3/1/2016	M		Ksh 400,000.0
K001	JKL	2/7/1990	7/1/2016	F		Ksh 700,000.0
S007	MNO	2/9/1960	7/1/2016	M		Ksh 600,000.0
Z006	KRS	4/8/1992	2/2/2016	M		Ksh 500,000.0
A008	TUV	4/8/1960	3/2/2016	M		Ksh 700,000.0
B005	CED	2/6/1995	5/2/2016	F		Ksh 600,000.0
C011	HGF	5/6/1990	10/2/2016	M		Ksh 400,000.0
K012	LKJ	2/7/1970	6/1/2016	M		Ksh 700,000.0
S019	NOM	2/9/1991	4/6/2016	M		Ksh 600,000.0

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

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

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

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

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

(iv) Create the columns COMMENT and AMT AWARDED.

The COMMENT is based on the following

- I f the gender is male and the age by the data of applicable is greater than 30 years the COMMENT is INELIGIBLE otherwise ELIGIBLE.

- Amount awarded if a person is eligible if 80% of the amount applied.

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

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

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

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

	AMOUNT(Ksh)
MALE	
FEMALE	
Total	

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

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

(i) Original worksheet

(ii) Evaluate worksheet

(iii) Final worksheet

(iv) The pie chart

QUESTION TWO

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

ADMNO	S_NAME	CLASS	BOOK_NO	TITLE	BORROW TYPE	DATE_BORROWED	DATE_RETURNED
123	MIKE	1A	B001	COMPTER STUDIES BK 1	SHORT	2-1-2016	12-1-2016
456	JOHN	1B	A002	COMPREHENSIVE ENG BK 1	LONG	1-2-2016	17-1-2016
789	ADREW	1C	B003	KIE MATHEMATICS BK 1	LONG	1-3-2016	14-3-2016
987	JAMES	2A	D004	LONGHORN GEOGRAPHY BK2	SHORT	1-4-2016	8-4-2016
654	JACOB	2B	K005	KISWAHILI SHAIRI BK2	SHORT	1-5-2016	9-5-2016
321	NANCY	2C	B006	MATHEMATICS BK2	SHORT	2-3-2016	10-3-2016
879	MARY	3A	C005	HISTORY BK3	LONG	2-4-2016	17-4-2016
564	MERCY	3B	K009	FOUNDATION CHEMISTRY BK 1	LONG	2-5-2016	14-5-2016
213	PETER	3C	H001	KISWAHILI LUGHA BK 2	LONG	1-4-2016	18-4-2016
123	MIKE	1A	K005	KISWAHILI SHAIRI BK2	SHORT	1-5-2016	19-5-2016
456	JOHN	1B	B006	MATHEMATICS BK2	SHORT	1-4-2016	5-4-2016
789	ADREW	1C	C005	HISTORY BK3	SHORT	1-4-2016	7-4-2016
987	JAMES	2A	K009	FOUNDATION CHEMISTRY BK 1	LONG	1-5-2016	8-5-2016
654	JACOB	2B	H001	KISWAHILI LUGHA BK 2	LONG	1-4-2016	22-4-2016

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

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

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

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

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

b) Create a the following queries

(i) Query named chargesqry for all charges for books on short loan the query should have the following fields(ADMNO,S_NAME,BOOK_NO,TITLE,BORROW TYPE,DATE_BORROWED,DATE_RETURNED,NO_OF_DAYS_BORROWED,NORMAL_CHARGE,PENALTY_CHARGE,TOTAL_CHARGE)(10 Marks)

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

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

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

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

c) Print the following **(4 Marks**)

(i) All tables with data

(ii) Both query with data

(iii) Shortbetweendatesrpt

(iv) studentchrgrpt

KCSE 2025 TOP SCHOOLS MOCKS

NATIONAL TRIAL 4

451/1

COMPUTER STUDIES

PAPER 1

TIME: 2½ HOURS

NAME……

SCHOOL…… **SIGN**……

INDEX NO…… **ADM NO**……

Kenya Certificate of Secondary Education.

INSTRUCTIONS TO CANDIDATES

a) *Write your name and index number in the spaces provided above*

b) *Sign and write your name in the spaces provided above*

c) *This paper consists of **two** sections; A and B*

d) *Answer all questions in section A*

e) *Answer question 16 and any other three questions from section B*

For official use only

Section	Question	Candidates score
A	1-15	
B	16	
	17	
	18	
	19	
	20	
TOTAL SCORE		

SECTION A (40 Marks)

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

1. Give **TWO** reasons why Powder type fire extinguishers are not recommended to be used in a computer laboratory. **(2 Marks)**

2. State the purpose of each of the following memories in a computer system. **(2 marks)**

ROM

RAM

3. State two factors that one would consider when selecting data entry method in computing. **(2 Marks)**

4. Describe the following types of printers and state one application area of each. **(3Marks)**

(a) Dot matrix

(b) Thermal printer.

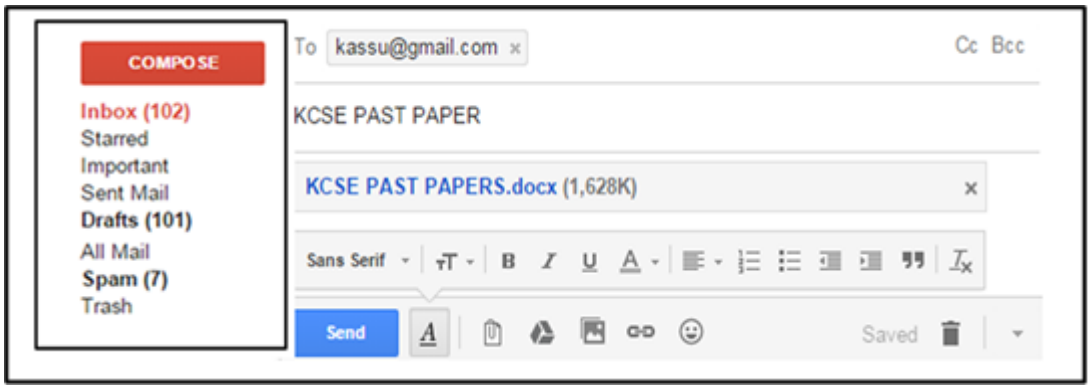
5. Differentiate between in-house software and freeware. **(2 Marks)**

6. Give two importance of feedback mechanism in systems **(2 Marks)**

7. With an aid of a diagram, explain one-to-one database relationship. **(2 Marks)**

8. ISABOKE Secondary School intends to set up internet connection in their school for e-learning purposes. Advise the school management on four internet connectivity requirements that is required for them to be able to access internet. **(2 Marks)**

9. The figure below shows an extract of an e-mail application.



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

(a) Trash

***(b)* Spam**

(c) Inbox

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

11. State three negative impact of information communication technology on the Environment.

(3 Marks)

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

a. Report file.

b. Sort file.

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

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

(3 Marks)

a. Simulation

b. Tutorial

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

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

SECTION B (60 Marks)

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

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

b. State three situations when REPEAT .. UNTIL structure can be used in writing a program

(3 Marks)

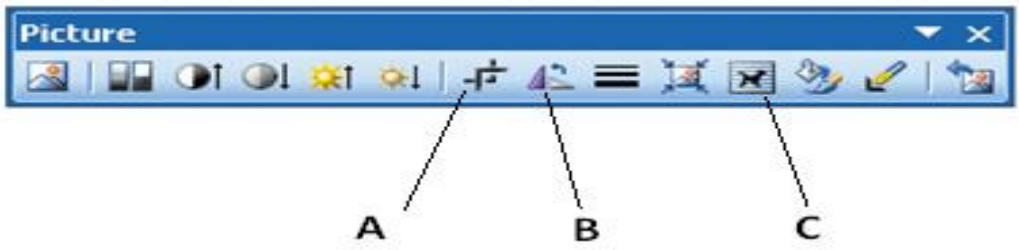
c. The roots of the equation $\mathbf{ax^2 + bx + c = 0}$ are given by the formula

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

i. Write a pseudocode for the above program **(5 Marks)**

ii. Draw a flow chart for the above pseudocode **(5 Marks)**

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



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

(i) A **(1 Mark)**

(ii) B **(1 Mark)**

(iii) C **(1 Mark)**

(b) State the importance of Column breaks as used in word processor. **(1 Mark)**

(c) Change case is where a user applies so that the text can have some contrast in size. Write the word Digital SIGNAL (2 Marks)

(i) Title case

(ii) Toggle case

(d) Define the following terms as used in charts. (2 Marks)

(i) Legend

(ii) Data range

(e) The table below shows how a kiosk owner uses a spread sheet to keep records in a shop.

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

(I) Write a **function** to calculate the total buying price. **(2 Marks)**

(II) Write a **formula** to calculate the Profit. **(2 Marks)**

(III) The total buying prices of all items was increased by 12% and the value 12% is placed in cell B6. Using cell addresses with absolute referencing, write a formula to calculate the Total Selling Price in cell E2. **(2 Marks)**

(IV) State the output of the expression =SUMIF(F2:F5,"<1 500")would return**.** **(1 Mark)**

18.a. Describe the term prefixing an extra sign bit as used in data representation. **(2 Marks)**

b. Convert each of the following numbers system.

(i) 0.78125_{10} to binary **(2 Marks)**

(ii) $3A9_{16}$ to Octal **(2 Marks)**

c. Perform the following binary operation. **(3 Marks)**

1010.11+111.10-101.11

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

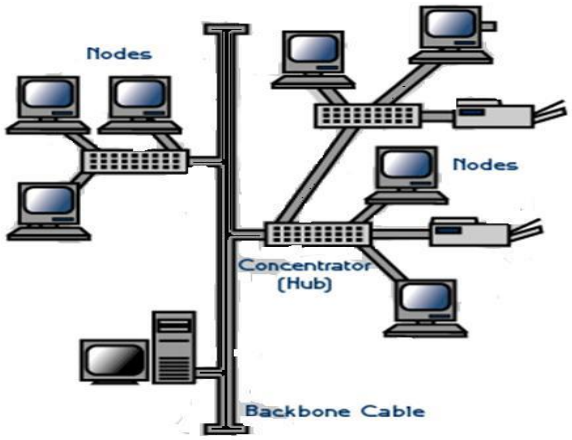
19.a. Distinguish between the following terms as used in data communication **(6 Marks)**

i. Guided transmission medium and unguided transmission media

ii. Multiplexing and de-multiplexing

iii. Logical and physical Topology

b. Below is a diagram of a network topology.



i. Name the above topology **(1 Mark)**

ii. State two advantages and two disadvantages of using the topology named above **(4 Marks)**

c. List and explain the two data transmission techniques **(4 Marks)**

20.a. Distinguish between a computer drive and computer driver **(2 Marks)**

b. State any four factors to consider when selecting an operating system **(4 Marks)**

c. Explain any four factors that dictates how the operating system organizes data in a computer **(4 Marks)**

d. Define the term file in relation to the operating system **(1 Mark)**

e. The operating system stores details of a file for easy identification and retrieval of files. Explain any four file details the operating system uses to search and identify a file **(4 Marks)**

f. Distinguish between a menu driven operating system and graphical user interface operating system **(2 Marks)**

KCSE 2025 TOP SCHOOLS MOCKS

NATIONAL TRIAL 4

451/2

COMPUTER STUDIES

PAPER 2

TIME: 2½ HOURS

NAME……

SCHOOL…… **SIGN**……

INDEX NO…… **ADM NO**……

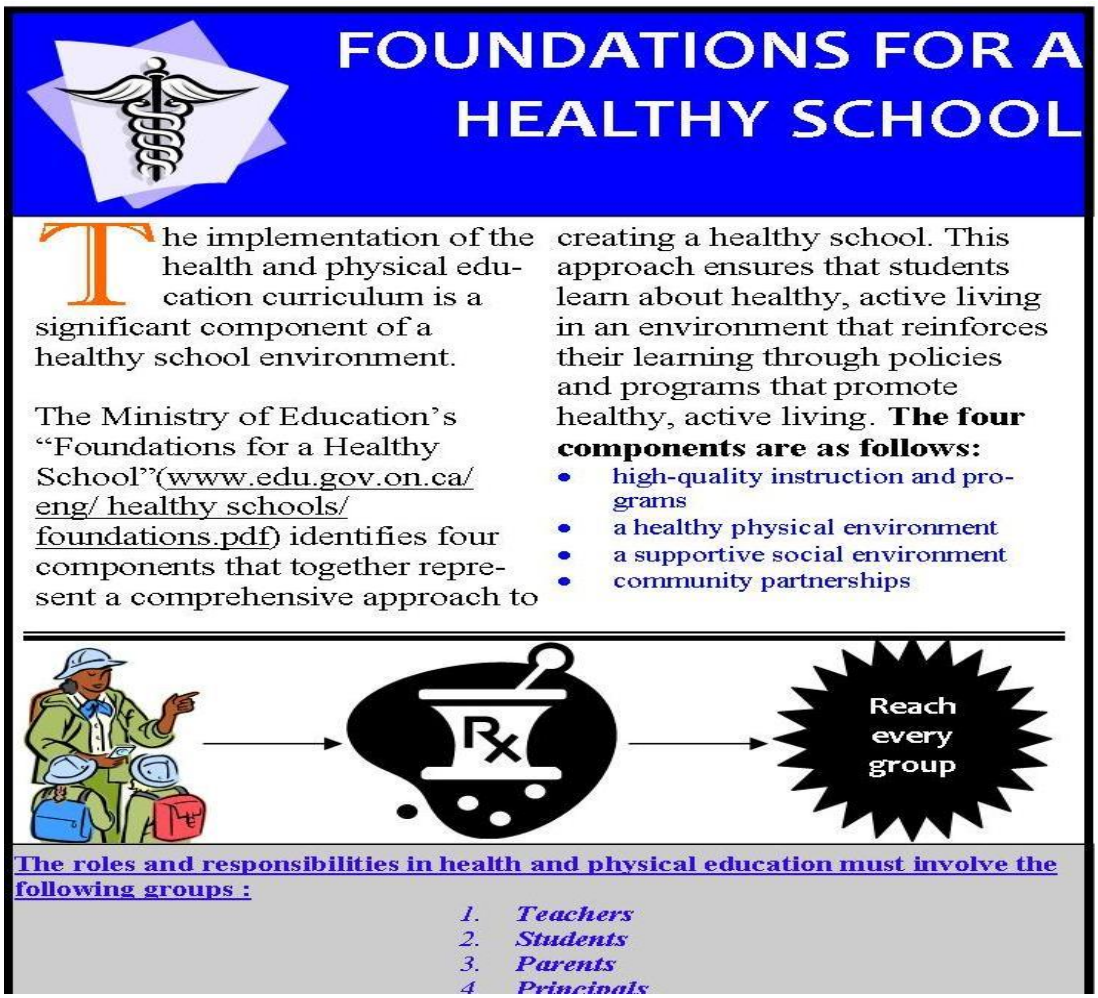
Kenya Certificate of Secondary Education.

INSTRUCTIONS TO CANDIDATES

1. *Type your name and index number at the top right hand corner of each printout*
2. *Sign and write the date of the examination below the name and index number on each printout*
3. *Write your name and index number on the compact disks*
4. *Write the name and version of the software used for each question attempted in the answer sheet*
5. *Passwords should not be used while saving in the compact disks*
6. *Answer all the questions*
7. *All questions carry equal marks*
8. *All answers must be saved in your compact disks*
9. *Make a printout of the answers on the answer sheets provided*
10. *Hand in all the printouts and the compact disks*

QUESTION 1

(a) Using Desktop Publishing application program, design the following publication. Name the file as HEALTHY_SCHOOL **(19mks)**



(b) Prepare the page layout out as follows:

(i) Custom paper size: Width = 11.6", Height = 8.268 **(2mks)**

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

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

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

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" **(3mks)**

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

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

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

- 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** **(2mks)**

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

(h) Enforce hyphenations to the text in columns **(1mk)**

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

(j) Make the designs to fit one page **(1mk)**

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

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

(m) Print the publication. **(1mk)**

Question 2

The information in the table below was obtained from the books of Safiri Transport Company.

CAR	MODEL	REGNo	EAR O MAN A CTUR	DRIVEI	IDNO	EMPLO YMENT No	TRIPS MADE	DESTI-NATION	LLOWAN E PER TRIP	DAILY PAY RATE
TOYOTA	PICKUP	KAG 725 H	1996	JOHN	122834	DI1223	5	NAIROBI	1250	1500
ISUZU	SALOON	KCB 725 D	2010	MARY	153458	DI9853	3	KERICHO	3400	1500
MAZDA	S/SAGON	KBC 763 L	2006	BETTY	986732	DO4587	15	KISUMU	4300	1500
IVECO	TRUCK	KAG 625 H	1987	KYLE	985443	DO6592	20	KERICHO	3400	1500
TATA	TRUCK	KZG 725	2011	PETER	758849	DI4010	25	KERICHO	3400	1500
JAC	TRUCK	KAA 740 H	1992	JERRY	985873	DO9203	40	NAIROBI	1250	1500
NISSAN	S/WAGON	KAG 552 M	1990	PAUL	857330	DO8345	2	MUHORON	4100	1500
MAZDA	SALOON	KCB 678 J	2010	SETH	764943	DI9352	15	M0MBASA	8000	1500
ITSUBIS	TRUCK	KCC 345 F	2006	KATE	934472	DI8754	2	KERICHO	3400	1500
TOYOTA	S/WAGON	KCA 892 U	1987	CALEB	109456	DI6557	1	MUHORON	4100	1500
TOYOTA	S/WAGON	KAP 544 R	2011	TIM	678842	DO7395	1	KISUMU	4300	1500
ISUZU	S/WAGON	KAP 711 R	1992	PATRIC	764484	DO5764	7	NAIROBI	1250	1500
BENZ	SALOON	KBN 877 C	1991	BRIAN	769973	DI2343	3	KISUMU	4300	1500

a. Using a database management application split the information in the above table into two tables namely vehicle and drivers respectively and save the database as Safiri Transport Company **(15 Marks)**

b. Create a relationship between the two tables **(2 Marks)**

c. Create an appropriate form that would be used to enter new records in the driver's table and save it as form driver **(7 Marks)**

d. Create a query that will display a list of all the drivers who made more than 5 trips to kericho, include all the necessary details. Save it as kericho. **(5 Marks)**

e. Create a query with a calculated field named total allowance to display the total allowance earned by each driver, include all the necessary details. Save it as allowance **(5 Marks)**

f. Using both tables, create a query that would be used to complete each driver's earnings and save it as pay roll. **(3marks)**

g. Using the payroll query in (f) design a report for Safari Transport Company that would used to calculate total allowance and monthly pay for each driver, assuming that each driver works for 25 days in a month. **(7marks)**

h. Print vehicle, driver, form driver, kericho, allowance and payroll **(6 Marks)**

KCSE 2025 TOP SCHOOLS MOCKS

NATIONAL TRIAL 5

451/1

COMPUTER STUDIES

PAPER 1

TIME: 2½ HOURS

NAME……

SCHOOL…… **SIGN**……

INDEX NO…… **ADM NO**……

Kenya Certificate of Secondary Education.

Instructions to Candidates

(a) *Write your name and index number in the spaces provided above.*

(b) *This Paper consists of* ***two*** *sections* ***A*** *and* ***B****.*

(c) *Answer* ***all*** *the questions in* ***section A****.*

(d) *Answer* ***question 16*** *(compulsory) and any other* ***three*** *questions from section* ***B****.*

FOR EXAMINER'S USE ONLY

Section	Questions	Candidate's score
A	1- 15	
B	16	
	17	
	18	
	19	
	20	
	TOTAL SCORE	

SECTION A (40 MARKS)

Answer ALL questions in the spaces provided

1. Differentiate between embedded computer and dedicated computer **(2 marks)**

2. The current monitor technology uses LED back lit technology. Give **two** advantages of using TFT monitors over CRT monitors **(2 marks)**

3. A Form four student wants to send a large document to a printer.

a) State the name for the area of memory that the document is sent to immediately from RAM. **(1 mark)**

b) As the printer runs out of paper during printing, the operating system sends a signal back to the computer to stop temporarily. Name this function of the operating system **(1 mark)**

4. a) Differentiate between a flash memory and compact disk as used in computer storage devices. **(2 marks)**

b) People like using DVDs over compact disks yet they are of the same physical size. State **three** reasons that justifies this. **(3 marks)**

5. For a monitor to display images, it must be connected through video port to a video adapter or controller mounted on the mother board. What is the role of a **video adapter**? **(2 marks)**

6. Name four categories of input devices **(2 marks)**

7. State any **two** physical measures taken to protect a computer laboratory from unauthorized access. **(2 marks)**

8. Most word processors have some automated features such as word wrap and type over modes. Describe these features **(2 marks)**

9. Differentiate between proofreading and formatting a document as used in word processing **(2 mks)**

10. Most computerized systems in different organizations face a lot of unauthorized access such as **Eavesdropping**, **Surveillance** and **Industrial espionage**. State a control measure against each vice. **(3 marks)**

11. A world wide web is a vast virtual space in the internet where information is made available such as web portals and blogs. Different between a **web portal** and a **blog.** **(2 marks)**

12. Differentiate between **filtering** and **hiding** of rows/columns as used in spreadsheets **(2 mks)**

13. Industrial plants use computer systems in different ways such as **Computer Aided design**, **manufacturing**, **Simulation** and **process control**. Explain how computers are used in the mentioned areas above. **(4 marks)**

14. a) Differentiate between **Job displacement** and **Job replacement**. **(2 marks)**

b) State **three** advantages of using automated production in manufacturing plants. **(3 marks)**

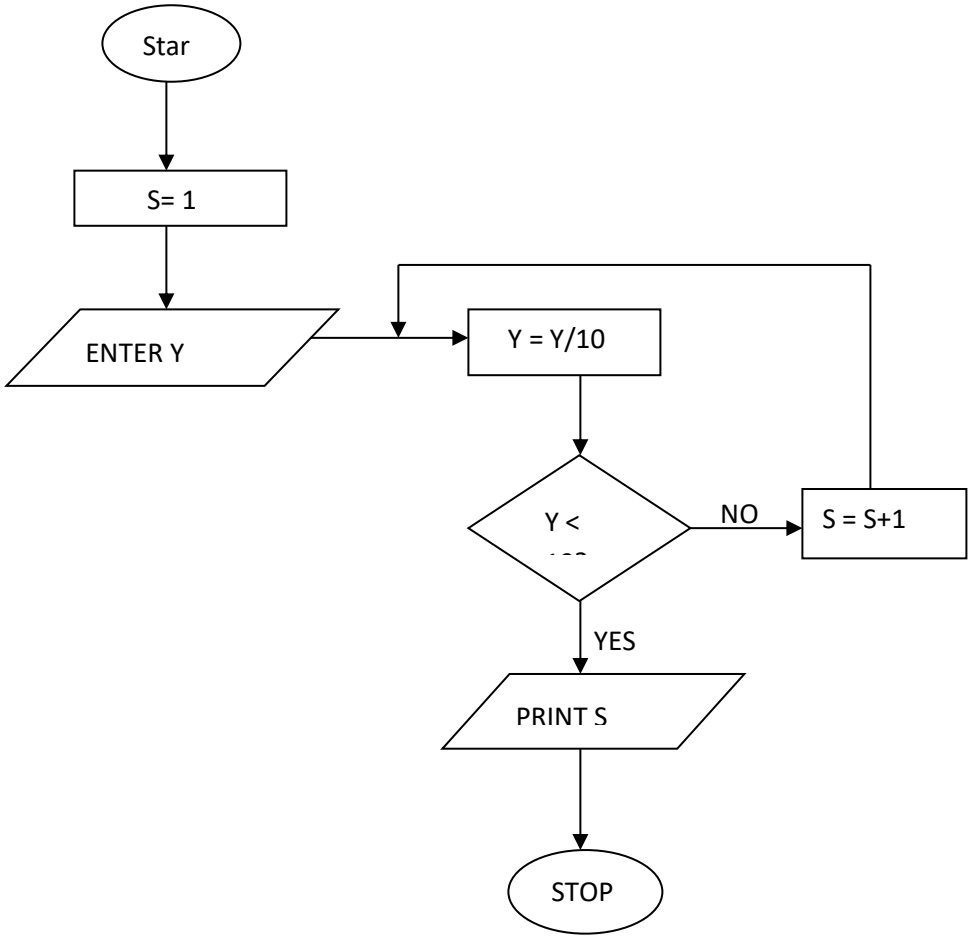
15. Due to high demand and dynamic nature of computers and information systems, there is need for qualified computer trainers. What are the roles of computer trainers? **(3 marks)**

SECTION B (60 MARKS)

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

16. a) By use of a Flowchart construct, differentiate between a **while loop** and **Repeat… Until loop** **(4 marks)**

b) Study this flowchart and use it to answer questions that follows



c) Give the expected output from the flowchart when the value of Y is: **(4 marks)**

i) 48

ii) 800

d) Write the pseudocode that can be used to create a program represented by the above flowchart. **(7 marks)**

17. a) Differentiate between **a primary key** and **a foreign key** as used in databases. **(2 marks)**

b) State **four** factors to be considered when designing a good database **(4 marks)**

c) Explain the use of each of the following field data types as used in database **(3 marks)**

i) OLE object

ii) Lookup wizard

iii) Memo

d) Kibet has been experiencing a lot of problems in his computer. As a result, he decided to format his computer and re-installed a new operating system.

i) What is **formatting** in relation to the above context **(2 marks)**

ii) What precaution must Kibet observe before formatting his computer **(1 mark)**

e) You are required to purchase an operating system. State **three** factors that you should consider before acquiring the software. **(3 marks)**

18. a) Define the following terms as used in networking **(3 marks)**

i) Broadband

ii) Bandwidth

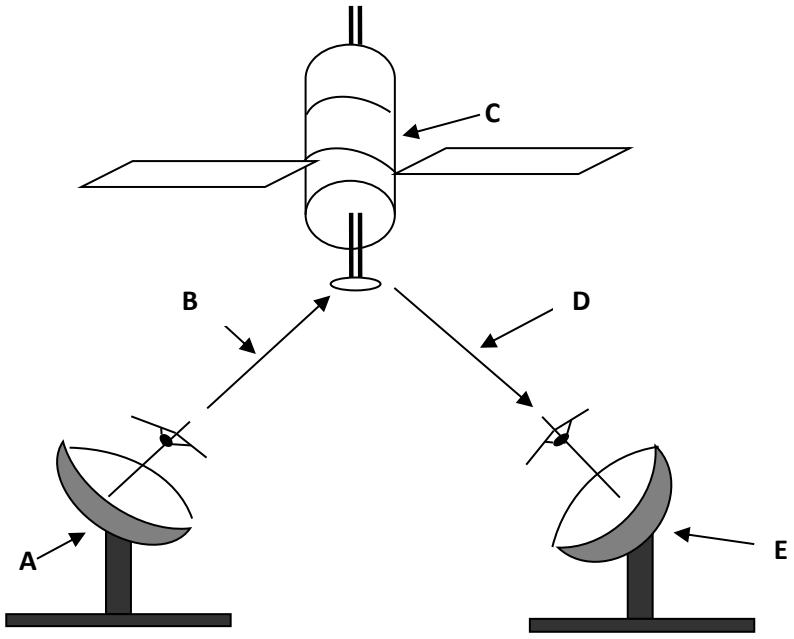
iii) Multiplexing

b) List **four** elements of networking **(2 marks)**

d) Most institutions are moving towards the use of fibre optic cables. State **three** reasons why fibre optic is preferred **(3 marks)**

e) Differentiate between **Hub** and **Bridge** as used in networking. **(2 marks)**

f) The diagram below represents a signal transmission from point A to point E. Name the parts labeled A, B, C, D, E **(5 marks)**



19. a) Binary systems has been used to develop most electronic devices. Give **three** advantages of using binary. **(3 marks)**

b) Convert the following number systems **(4 marks)**

i) 37.625_{10} to binary

ii) BCD. EF_{16} to Octal

c) Using twos complement, perform the following arithmetic operation leaving your answer in decimal notation. **(4 marks)**

$39_{10} - 19_{10}$

d) A Mwalimu Consultancy student was developing a file. List any **four** attributes that the student must consider in the development process **(2 marks)**

20. a) A system analyst in Changamwe preferred using phased changeover to implement a new system. State **three** reasons for this preference. **(3 marks)**

b) State **three** reasons why an organization may change an information system. **(3 marks)**

c) Different students were asked to state the characteristics of a system. The responses were:

i. They are holistic

ii. They are open or closed systems

iii. They have a boundary and environment.

Explain each of the above responses. **(3 marks)**

e) Explain the following data collection stages as used in data processing **(3 marks)**

i) Data preparation

ii) Media conversion

iii) Input validation

f) State **three** ways a data entry clerk may use to reduce threats to data integrity **(3 marks)**

KCSE 2025 TOP SCHOOLS MOCKS

NATIONAL TRIAL 5

451/2

COMPUTER STUDIES

PAPER 2

TIME: 2½ HOURS

NAME……

SCHOOL…… **SIGN**……

INDEX NO…… **ADM NO**……

Kenya Certificate of Secondary Education.

INSTRUCTIONS TO CANDIDATES

- *This paper has **two** questions.*
- *Answer all the **questions.***
- *All questions carry equal **marks.***
- *Type your name and index number at the right hand corner of each print out.*
- *Write your name and index number on the storage medium provided.*
- *Write your name and version of software used for each question attempted.*
- *Passwords **should not** be used while saving in your work.*
- *Make a printout of the answers on the answer sheets provided*
- *Hand all the **print outs** and the **storage medium***

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

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

b) i) Copy the details of Kipto's milling company limited to sheet 2 of your worksheet. **(2marks)**

ii) Add a column called "Total" and calculate the Total production cost of the two Quarters. **(4marks)**

iii) Use relative referencing to calculate the total for the other expenses. **(4marks)**

c) i) Calculate the total expenses for each month so as to give the results as "Total expenses" on row 10. **(4marks)**

ii) On the paper provided, write the formula used to calculate the expenses for the month of April. **(2marks)**

d) i) Use absolute referencing to calculate the cumulative total expenses for the two quarters in cell H10. **(4marks)**

ii) Write the formula used to get the cumulative total on the paper provided. **(2marks)**

iii) Calculate the percentage of total expenses of the respective months and display the results on row 11 as "percentage of total expenses". **(4marks)**

iv) Write the formulae used to get the percentage of May. **(2marks)**

v) Draw a line graph to illustrate the percentage of the total expenses for the six months indicating the months. Save your work as Expenses 2. **(10 marks)**

vi) Print Expenses 1 and Expenses 2. **(2marks)**

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

b) Create a table called **EMPLOYEE 1** with the following fields and hence enter data into it as shown in fig 1 below. NB: Choose an appropriate primary key. **(14marks)**

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

Fig 1

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

c) i) Insert **two** new fields to hold the employee's profession and deductions. **(4 marks)**

ii) Data for included fields is as follows;

Profession

Mohammed, Wanyama and Wairimu are Doctors. Oduor and Omondi are accountants.
Kiprono isan Administrator, Kirui is a systems analyst and Cherono is a secretary.

Deductions

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

Enter the above data into the respective fields. **(6 marks)**

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

(3marks)

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

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

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

(6marks)

f) Print **EMPLOYEE1, EMPLOYEE2, LIST1, LIST 2** and **REPORT**. **(3marks)**

KCSE 2025 TOP SCHOOLS MOCKS

NATIONAL TRIAL 6

451/1

COMPUTER STUDIES

PAPER 1

TIME: 2½ HOURS

NAME……

SCHOOL…… **SIGN**……

INDEX NO…… **ADM NO**……

Kenya Certificate of Secondary Education.

INSTRUCTIONS TO CANDIDATES:

1) *Write your name, index number and school in the spaces provided above.*
2) *Write the date of examination and sign in the spaces provided.*
3) *This paper consists of **two** sections.*
4) *Answer **all** the questions in section **A**.*
5) *Answer question **16** (compulsory) and **any other three** questions from section **B**.*

FOR EXAMINER'S USE ONLY

SECTION	QUESTION	MAXIMUM SCORE	ACTUAL SCORE
A	1 – 15	40	
B	16	15	
	17	15	
	18	15	
	19	15	
	20	15	
		TOTAL SCORE	

SECTION A (40 MARKS)

Answer all the questions in this section in the spaces provided

1. State the **two** functions of the control unit. **(2 marks)**

2. Explain **four** reasons which make microcomputers suitable for personal computing work. **(2 marks)**

3. State the functions of the following keyboard key combinations. **(3 marks)**

a) CTRL + ESC

b) ALT + F4

c) CTRL + ALT + DEL

4. Distinguish between an integrated software and a software suite. **(2 marks)**

5. Differentiate between embedded computers and dedicated computers. **(2 marks)**

6. Give **three** reasons why a company may prefer a tailor made software over off the shelf software. **(3 marks)**

7. Explain the function of the following registers. **(2 marks)**

a) Instruction registers

b) Address registers

8. a) Explain how a computer system can be protected from intruders. **(2 marks)**

b) State any **two** laws governing protection of information. **(2 marks)**

9. a) What is the meaning of graphics as used in word processing? **(1 mark)**

b) Give **two** sources of graphics in the computer. **(2 marks)**

10. a) State the cursor action when the following keyboard keys are pressed. **(2 marks)**

i) Delete key

ii) Insert key

iii) Pgup (page up) key

iii) Pgdwn (page down) key

iv)

11. Identify the parts of the following e-mail address labeled A, B, C and D. **(4 marks)**

Ict@kenyaonline.co.ke

A B C D

12. a) What is a search engine? **(1 mark)**

b) Give **four** examples of search engines you know. **(2 marks)**

13. a) Define the following terms as used in a worksheet. **(2 marks)**

i) Columns

ii) Rows

b) Distinguish between absolute cell reference and relative cell reference. **(2 marks)**

Relative Referencing

Absolute referencing;

14. a) State **one** data processing file. **(l mark)**

b) Explain the function of the file named above in 14 (a). **(2 marks)**

15. Give **one** reason to the growth of communication industry in Kenya. **(l mark)**

SECTION B: (60 MARKS)

Answer question 16 and any other three questions from this section

16. a) List **two** examples of;

i) Third generation languages. **(2 marks)**

ii) Object oriented languages. **(2 marks)**

b) Define **(2 marks)**

i) Object code

ii) Source code

c) Differentiate between a compiler and an interpreter. **(2 marks)**

d) A car rental firm leases its cars for Kshs. 2500.00 per day. The manager gives a discount based on the number of days that the car is rented. If the rental period is greater than or equals to 7 days then a 25% discount is given. Write a pseudocode to accept a car number and the rental period, and calculate the total amount earned by the company when a car is leased**.(7 marks)**

17. a) State **three** parameters that determines the magnitude of a number. **(3 marks)**

b) Using two's complement, show how the arithmetic below would be carried out on a 8 - bit computer system (+54) – (+29). **(5 marks)**

c) Using one's complement, perform the following binary arithmetic leaving the answer in decimal notation. (**5 marks)**

$1101_2 - 100101_2$

d) Differentiate between a word and a word length. **(2 marks)**

18. a) State the meaning of the following operating systems terms:

i) Interrupt **(1 mark)**

ii) Trouble shooting. **(1 mark)**

iii) Clock speed. **(1 mark)**

b) Differentiate the following. **(4 marks)**

i) Disk compression and disk defragmentation.

ii) Disk partitioning and disk formatting.

c) The operating system has several functions in a computer.

Explain how the operating system performs the following functions.

i) Error handling **(3 marks)**

ii) Resource control and allocation **(3 marks)**

d) Computer can fail to work due to problems associated with operating system.

Explain how the following problems can be corrected. **(2 marks)**

i) Runtime problems

ii) Corrupted registry

19. a) Giving examples, differentiate between hard system and soft system. **(4 marks)**

b) Explain the following system characteristics. **(2 marks)**

i) System control.

ii) Sub-systems

c) i) What is a closed system? **(1 mark)**

ii) Give **three** characteristics of a closed system. **(2 marks)**

d) Why is feedback necessary in a system? **(2 marks)**

e) Draw a diagram to show a system that is controlled through feedback. **(4 marks)**

20. **a)** Define the term Multiplexing as used in networking. **(1 mark)**

b) Describe the following signal wave properties. **(3 marks)**

i) Frequency of a wave

iii) Wavelength

iv) Amplitude

c) Use a diagram to distinguish between ring and star network topologies. **(2 marks)**

d) **Give one** advantage and **one** disadvantage of each of (c) above. **(4 marks)**

e) **i)** What is virtual reality? **(1 mark)**

ii) Describe **four** essential equipment to achieve virtual reality. **(4 marks)**

KCSE 2025 TOP SCHOOLS MOCKS

NATIONAL TRIAL 6

451/2

COMPUTER STUDIES

PAPER 2

TIME: 2½ HOURS

NAME……

SCHOOL…… **SIGN**……

INDEX NO…… **ADM NO**……

Kenya Certificate of Secondary Education.

INSTRUCTIONS TO CANDIDATES

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

	A	B	C	D	E	F	G
1	**KIRUI'S MILLING COMPANY LIMITED**						
2	**P.O BOX 625 NAKURU**						
3		**First quarter**			**Second quarter**		
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8	Promotion	2564	2407	3071	3188	2525	2530
9	Salary	4525	4248	5420	5626	4456	4465

b) i) Copy the details of Kirui's milling company limited to sheet 2 of your worksheet.**(2 marks)**

ii) Add a column called "Total" and calculate the Total production cost of the two Quarters. **(4 marks)**

iii) Use relative referencing to calculate the total for the other expenses. **(4 marks)**

c) i) Calculate the total expenses for each month so as to give the results as "Total expenses" on row 10. **(4 marks)**

ii) On the paper provided, write the formula used to calculate the expenses for the month of April. **(2 marks)**

d) i) Use absolute referencing to calculate the cumulative total expenses for the two quarters in cell H10. **(4 marks)**

ii) Write the formula used to get the cumulative total on the paper provided.**(2 marks)**

iii) Calculate the percentage of total expenses of the respective months and display the results on row 11 as "percentage of total expenses". **(4 marks)**

iv) Write the formulae used to get the percentage of May. **(2 marks)**

v) Draw a line graph to illustrate the percentage of the total expenses for the six months indicating the months. Save your work as Expenses 2. **(10 marks)**

vi) Print Expenses 1 and Expenses 2. **(2 marks)**

2. a) A hospital uses a database to maintain data about its employees.

Create a database file named **EMPLOYEE**. **(1 mark)**

b) Create a table called **EMPLOYEE 1** with the following fields and hence enter data into it as shown in fig 1 below. NB: Choose an appropriate primary key. **(14 marks)**

- EMP NO
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- DEPARTMENT
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Fig 1

Emp	Name	Date of birth	Department	Gross pay
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10	Nancy Kerubo	22/9/1980	Medical	20000

c)i) Insert **two** new fields to hold the employee's profession and deductions. **(4 marks)**

ii) Data for included fields is as follows;

Profession

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Deductions

Emp no	Amount
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01	12,000
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09, 10	4,000

Enter the above data into the respective fields. **(6 marks)**

iii) Sort the records in ascending order based on the name field and save as EMPLOYEE 2. **(3 marks)**

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

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

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

(6 marks)

f) Print **EMPLOYEE1, EMPLOYEE2, LIST1, LIST 2** and **REPORT**. **(3 marks)**

KCSE 2025 TOP SCHOOLS MOCKS

NATIONAL TRIAL 7

451/1

COMPUTER STUDIES

PAPER 1

TIME: 2½ HOURS

NAME……

SCHOOL…… **SIGN**……

INDEX NO…… **ADM NO**……

Kenya Certificate of Secondary Education.

INSTRUCTION TO CANDIDATES

a) *Write your name and index number in the space provided above.*
b) *Sign and write the date of examination in the spaces provided above.*
c) *This paper consists of **two** sections **A** and **B**.*
d) *Answer **all** the questions in section **A**.*
e) *Answer question **16** and any other **three** questions from section **B**.*

For Examiner's Use Only

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

SECTION A (40 MARKS)

Answer ALL questions in the spaces provided

1. Differentiate between embedded computer and dedicated computer **(2 marks)**

2. The current monitor technology uses LED back lit technology. Give **two** advantages of using TFT monitors over CRT monitors **(2 marks)**

3. A Form four student wants to send a large document to a printer.

e) State the name for the area of memory that the document is sent to immediately from RAM. **(1 mark)**

f) As the printer runs out of paper during printing, the operating system sends a signal back to the computer to stop temporarily. Name this function of the operating system **(1 mark)**

4. a) Differentiate between a flash memory and compact disk as used in computer storage devices. **(2 marks)**

b) People like using DVDs over compact disks yet they are of the same physical size. State **three** reasons that justifies this. **(3 marks)**

5. For a monitor to display images, it must be connected through video port to a video adapter or controller mounted on the mother board. What is the role of a **video adapter**? **(2 marks)**

6. Name four categories of input devices **(2 marks)**

7. State any **two** physical measures taken to protect a computer laboratory from unauthorized access. **(2 marks)**

8. Most word processors have some automated features such as word wrap and type over modes. Describe these features **(2 marks)**

9. Differentiate between proofreading and formatting a document as used in word processing **(2 marks)**

10. Most computerized systems in different organizations face a lot of unauthorized access such as **Eavesdropping**, **Surveillance** and **Industrial espionage**. State a control measure against each vice. **(3 marks)**

11. A world wide web is a vast virtual space in the internet where information is made available such as web portals and blogs. Different between a **web portal** and a **blog.** **(2 marks)**

12. Differentiate between **filtering** and **hiding** of rows/columns as used in spreadsheets **(2 marks)**

13. Industrial plants use computer systems in different ways such as **Computer Aided design**, **manufacturing**, **Simulation** and **process control**. Explain how computers are used in the mentioned areas above. **(4 marks)**

14. a) Differentiate between **Job displacement** and **Job replacement**. **(2 marks)**

b) State **three** advantages of using automated production in manufacturing plants. **(3 marks)**

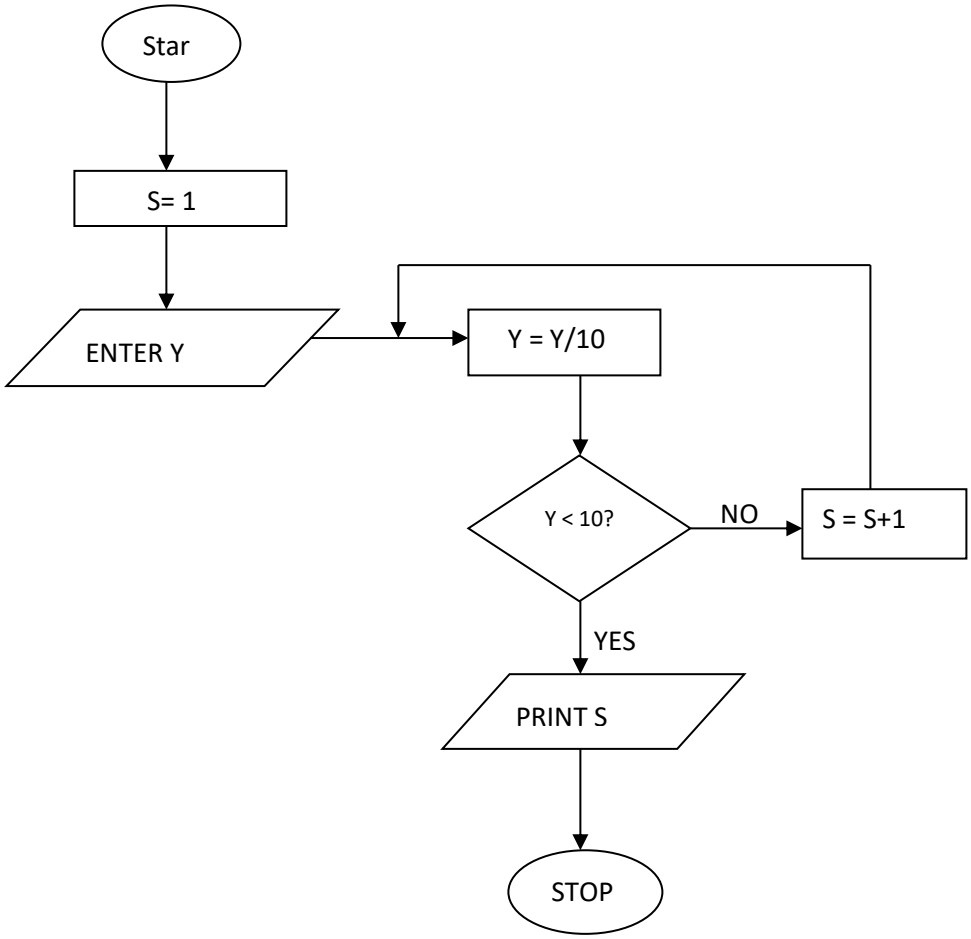
15. Due to high demand and dynamic nature of computers and information systems, there is need for qualified computer trainers. What are the roles of computer trainers? **(3 marks)**

SECTION B (60 MARKS)

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

16. a) By use of a Flowchart construct, differentiate between a **while loop** and FOR **loop(4 marks)**

b) Study this flowchart and use it to answer the questions that follow



g) Give the expected output from the flowchart when the value of Y is: **(4 marks)**

iii) 48

iv) 800

h) Write the pseudocode that can be used to create a program represented by the above f**lowchart.** **(7 marks)**

17. a) Differentiate between **a primary key** and **a foreign key** as used in databases**.** **(2 marks)**

b) State **four** factors to be considered when designing a good database **(4 marks)**

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

iv) OLE object

v) Lookup wizard

vi) Memo

d) Kibet has been experiencing a lot of problems in his computer. As a result, he decided to format his computer and re-installed a new operating system.

iii) What is **formatting** in relation to the above context **(2 marks)**

iv) What precaution must Kibet observe before formatting his computer **(1 mark)**

e) You are required to purchase an operating system. State **three** factors that you should consider before acquiring the software. **(3 marks)**

18. a) Define the following terms as used in networking **(3 marks)**

iv) Broadband

v) Bandwidth

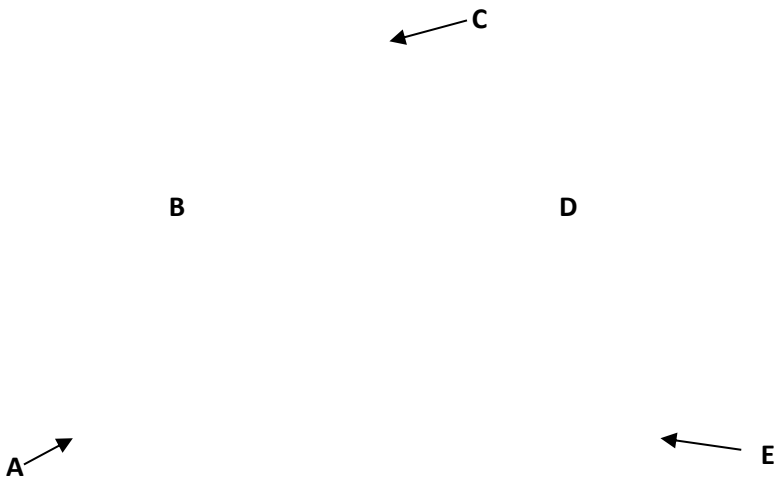
vi) Multiplexing

b) List **four** elements of networking **(2 marks)**

d) Most institutions are moving towards the use of fibre optic cables. State **three** reasons why fibre optic is preferred **(3marks)**

e) Differentiate between **Hub** and **Bridge** as used in networking. **(2 marks)**

f) The diagram below represents a signal transmission from point A to point E. Name the parts labeled A, B, C, D, E **(5 marks)**



19. a) Binary systems have been used to develop most electronic devices. Give **three** advantages of using binary. **(3 marks)**

b) Convert the following number systems **(4 marks)**

v) 37.625_{10} to binary

vi) $BCD.EF_{16}$ to Octal

c) Using twos complement, perform the following arithmetic operation leaving your answer in decimal notation. **(4 marks)**

$39_{10} - 19_{10}$

d) A student was developing a file. List any **four** attributes that the operating system will assign the file **(2 marks)**

20. a) A system analyst in Changamwe preferred using phased changeover to implement a new system. State **three** reasons for this preference. **(3 marks)**

b) State **three** reasons why an organization may change an information system. **(3 marks)**

c) Different students were asked to state the characteristics of a system. The responses were:

i. They are holistic

ii. They are open or closed systems

iii. They have a boundary and environment.

iv.

Explain each of the above responses. **(3 marks)**

d) Explain the following data collection stages as used in data processing **(3 marks)**

i) Data preparation

ii) Media conversion

Input validation

e) State **three** ways a data entry clerk may use to reduce threats to data integrity **(3 marks)**

KCSE 2025 TOP SCHOOLS MOCKS

NATIONAL TRIAL 7

451/2

COMPUTER STUDIES

PAPER 2

TIME: 2½ HOURS

NAME……

SCHOOL…… **SIGN**……

INDEX NO…… **ADM NO**……

Kenya Certificate of Secondary Education.

INSTRUCTIONS TO CANDIDATES

- Write your name, school and ADM NO number in the spaces provided above.
- No passwords should be used when saving your work.
- **Save your work in one folder with your Adm.no and full name.**
- All questions carry equal marks. **Answer all the questions.**

Question	Marks	AWARDED
1	50	
2	50	
TOTAL		

1. Create the following Publication using a DTP package and save it as **MCHANGO_1** and Set **paper size**: **A4 portrait** margins **2cms all round**. (5 marks)

i) Create the front page in page 1 and back page in page 2 of your publication (25 marks)

FRONT PAGE

HARAMBEE FOR SCHOOL FEES FOR OUR SON JAMRICK KUSOMA

TO MR, MRS, MISS,MS, DR ……

The family of Mr&MrsMchango wish to invite you for a harambee to raise college fees **for our son**

JamrickKusoma to be held on12/12/2014 at Kirimiti PCEA church from 2: 30 pm

CONTACTS US:
MRS MCHANGO
P.O. BOX 1655 MARAIGUSHU

CONTACTS US:
MR. KK MCHANGO
P.O. BOX 1655 MARAIGUSHU

There is a blessing for giving than receiving – LUCK DUBE

TITLE	*NAME*	*DATE*	*AMOUNT*	*AVAILABILITY*
There is a blessing for giving than receiving – LUCK DUBE				

THE BACK SIDE

ii) Using the **master page** insert the heading **"EDUCATION IS THE KEY TO LIFE"(5 Marks)**

iii) Insert thefooter of your names and index no. **(2 marks)**

iv) Insert page 3 and 4,then copy the front page publication to appear as 4 objects in one page one after the other. Rather fit four front page publications in one page (page 3). Using page 4 fit the back page publication to appear as **4 publications** in a single page (page 4) **(10 marks)**

v) Print the **entire publication** above **(3 marks)**

2. 2Queens ICT Services is a company with numerous branches in Kenya. In order to monitor the performance of the branches and that of the cities in which the branches are located, a database to organize the information is required.

a. Create a **database** file and name it **TeamEretria_dbms**. **(2 marks)**

b. (i) Create a table containing the following fields. **(4 marks)**

Field Name	Field Type
Warehouse_NO	Number/Numeric
Location	Text/Character
County	Text/Character
noOfEmployees	Number/Numeric

(ii) Make the field **Warehouse_NO**the primary key and save the tables as **MafisiT.**

(2 marks)

c. (i) Create a form from the**MafisiT**table and save it as **Jazia_1**. **(5 marks)**

(ii) Use the form to enter the records below. **(5 marks)**

Warehouse_NO	**Location**	**County**	noOfEmployees
10	Alihahr co	Garissa	100
20	Turkana ltd	Turkana	142
30	Kiawagogi org	Nairobi	210
40	Karura ltd	Kiambu	150
50	Komorocks	Mombasa	90
60	Kogallo	Kisumu	16
70	Moshi	Nairobi	89
80	Tanamwanga	Kakamega	700
90	Mogotio sisal	Nakuru	120
100	Chebunye	Bomet	600

d. (i) Modify the **MafisiT**table to include an additional field with the heading **SALES (USHS)** **(3 marks)**

(ii) Enter the information below for each of the stores. **(2 marks)**

Warehouse_NO	**SALES(USHS)**
10	789,300
20	685,400
30	376,958
40	255,420
50	457,800
60	682,458
70	541,000
80	235,420
90	152,415
10	133, 443

(iii) Apply **USHS as** currency symbol and **two decimal** places to all monetary value**. (2 marks)**

e. (i) Create a query from the **MafisiT** table to display the fields **Location, County, noOfEmployees** and **SALES (USHS)** for stores whose sales are less than **400,000 and Location starts with letter K. Name it as: Start_K** **(3 marks)**

(ii) Sort the records in **the query** above in alphabetical order of **Location** field and save it as **Marudio.** **(2 marks)**

f. (i) Create a tabular report with **landscape orientation** from the **MafisiT** table to display the fields in the following order. **Warehouse, Location, SALES (SHS) and compute the total sales. Save the report** as **MY DETAILS** **(4 marks)**

(ii) Sort records in the report in alphabetical order of the **Location** field. **(1 mark)**

(iii) Insert auto **number 1, 2, 3-10** at the end **right side** of the details. Label it **RANKS**. **(5 marks)**

(IV). Place**two straight lines** cutting across the page, one above and one below the sales total. **(2 marks**)

g. (i) Insert a header **2QUEENSSERVICES PERFORMANCE** in the report having font size 19 and centre it across the page. **(3 marks)**

(ii) Remove the report pagination and insert **your name and index number**in **MY DETAILS report.** **(2 marks)**

h. Print **MafisiT** table, **Marudio** query and **MY DETAILS** report. **(3 marks)**

KCSE 2025 TOP SCHOOLS MOCKS

NATIONAL TRIAL 8

451/1

COMPUTER STUDIES

PAPER 1

TIME: 2½ HOURS

NAME……

SCHOOL…… **SIGN**……

INDEX NO…… **ADM NO**……

Kenya Certificate of Secondary Education.

INSTRUCTIONS TO CANDIDATES

- *This paper consists of **TWO** Sections **A** and **B***
- *Answer all questions in Section **A***
- *Answer question **16 (compulsory)** and any other **THREE** question in section **B***

FOR OFFICIAL USE ONLY:

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

SECTION A

Answer All Questions

1. Define the following terms **(2mks)**

a) Multiplexing

b) Baseband signal

2. a. Give two reasons why two's complement is preferred to one's complement in computing. **(2mks)**

b. Write these abbreviations in full: **(2mks)**

FOTRAN……

BCD…….

ASCII…….....

EBCDIC……

3. Computers have evolved through a number of generations. List any three characteristics of the first generation of computers. **(3mks)**

4. a) Define an electronic spreadsheet and give two examples of the software. **(2mks)**

b) Differentiate between formula and function as used with spreadsheets. **(2mks)**

5. Explain the difference between digital signal and analog signal in data communication. **(2mks)**

6. List down two types of computer viruses **(2mks)**

7. Explain graphic based DTP software. **(1mk)**

8. Give two possible ways of fitting a document in one page. **(2mks)**

9. a) Draw a well labelled diagram of the data processing cycle. **(3mks)**

b) Give two disadvantages of electronic data processing method. **(2mks)**

10. Why must food and beverages be kept out of the computer lab? **(2mks)**

11. a) What are toggle keys in relation to keyboards? **(1mk)**

b) What type of keyboard would you prefer for the following and why? **(4mks)**

i) Visually impaired users

ii) Busy restaurant

12. Why are repeaters necessary when setting up a large network? **1mk)**

13. During class discussion, a Form One student was asked to present his findings on what Operating Systems perform in a computer. Explain two key points he will address. **(2mks)**

14. 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? **(3mks)**

i) Software Authenticity

ii) Multi-media capability

iii) Software portability

15. Outline four benefits of using word processors over manual typewriters. **(2mks)**

SECTION B: ANSWER Q 16 AND ANY OTHER THREE QUESTIONS

16. a State **two** distinct differences between compilers and interpreters. **(2mks)**

b i)Outline three demerits of using low level programming languages. **(3mks)**

(ii) Differentiate between monolithic and modular programs. **(1mk)**

c Study the following statements and answer the questions that follow.

Start

Initialize x to 3 and y to 4

Count = 1

While Count <=10

Increment x by 1
Update y by multiplying y by 2 and subtracting ½
Add x to y to attain z
Increase the value of Count by 2
End while
Print the values for x, y and z
Stop

i) What does the above statements represents? **(1mk)**

ii) What is the value for y and z? **(2mks)**

ii) Implement the above statements using a program flowchart. **(6mks)**

17. 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. **(2mks)**

b) How can the above identified errors be avoided? **(1mk)**

c) Other than the errors identified above, list two other errors that can be encountered during data processing. **(1mk)**

d) 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? **(1mk)**

State one merit of this mode. **(1mk)**

e) Describe data integrity. **(1mk)**

f) There are so many ways that can be used to reduce threats to data integrity. Mention any two. **(2mks)**

g) Give the best file organization employed by Magnetic tapes and SD Cards. **(1mk)**

h) i) The school's LAN is done using UTP cable. List **two** advantages of using this type of cable. **(2mks)**

ii) List **two** advantages of using fibre optic cable in networking. **(2mks)**

iii) Data flows in the school's LAN in a duplex manner. List **two** other modes of data transmission in a network. **(1mk)**

18. a. Outline three ways - 4 can be represented in a computer. **(3mks)**

b. Use one's compliment to represent -6_{10} in 8-bits formation. **(2mks)**

c. Differentiate between wavelength and frequency of a signal. **(2mks)**

d. Describe each of the following computer terminologies as used in data representation. **(4mks)**

i. Word
ii. Bit
iii. Byte
iv. Nibble

e. Convert 9.625_{10} to binary. **(2mks)**

f. Study the passage below:

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. **(2mks)**

19. a) State one function of each of these objects in a database. **(4mks)**

i) Table……

ii) Query……

iii) Forms……

iv) Reports……

b) State two features of a primary key field. **(2mks)**

c) Briefly describe the following field properties **(3mks)**

i) Format……

ii) Input mask

iii) Required……

d) List any two sources of graphics in a word processor **(2mks)**

e) List two health problems associated with improper sitting posture while using a computer. **(2mks)**

f) State two ways of mitigating intellectual property theft (piracy) **(2mks)**

20. a) Human activity systems are said to be soft systems. Give three reasons why they are said to be so. **(3mks)**

b) What are hard information systems? **(2mks)**

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

KCSE 2025 TOP SCHOOLS MOCKS

NATIONAL TRIAL 8

451/2

COMPUTER STUDIES

PAPER 2

TIME: 2½ HOURS

NAME……

SCHOOL…… **SIGN**……

INDEX NO…… **ADM NO**……

Kenya Certificate of Secondary Education.

INSTRUCTIONS TO CANDIDATES

1. *Type your name and index number at the top right hand corner of each printout.*
2. *Sign and write the date of the examination below the name and index number on each printout.*
3. *Write your name and index number on the compact disks.*
4. *Write the name and version of the software used for each question attempted in the answer sheet.*
5. *Passwords **should not be used** while saving in the compact disks.*
6. *Answer all the questions.*
7. *All questions carry equal marks.*
8. *All answers must be saved in your compact disks.*
9. *Make a printout of the answers on the answer sheets provided.*
10. *Hand in all the printouts and the compact disks.*

QUESTIONS

1. The following data was extracted from Applicants' file for Momaliche 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; MOMALICHE 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)**

(i) 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'. **(5mark)**

(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 mark)**

(ii) Name the axis appropriately **(2 marks)**

(h) Print: **(2 marks)**

I. **INTERVIEW**;

II. Successful Applicants Sheet;

2. 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.

KCSE 2025 TOP SCHOOLS MOCKS

NATIONAL TRIAL 9

451/1

COMPUTER STUDIES

PAPER 1

TIME: 2½ HOURS

NAME……

SCHOOL…… **SIGN**……

INDEX NO…… **ADM NO**……

Kenya Certificate of Secondary Education.

INSTRUCTIONS TO CANDIDATES

a) *This paper consists of two section **A** and **B***

b) *Answer all questions in section **A** (40 marks)*

c) *Answer question 16 **(Compulsory)** and any other **THREE** questions in section **B**.*

FOR EXAMINERS USE ONLY

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

SECTION A (40 MARKS)

Answer ALL the questions in this section

1. Define the following terms **(4mks)**

i) Multiplexing

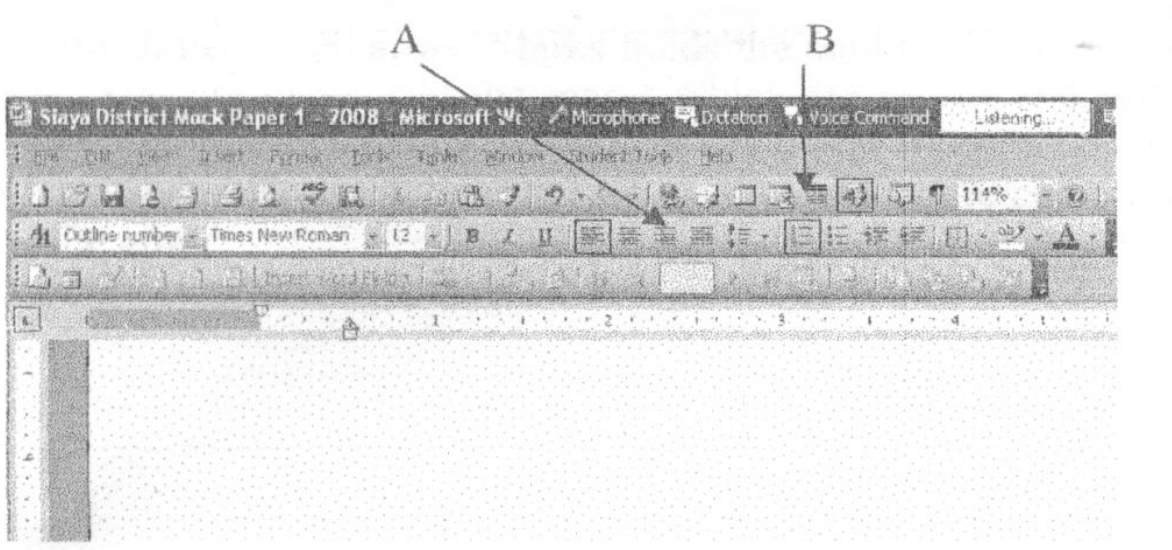
ii) Baseband signal

2. Explain the difference between digital signal and analog signal in data communication **(2mks)**

3. List down two types of computer viruses **(2mks)**

4. Below is a graphical representation of a section of a Microsoft words application window.

Use it to answer the question that follow.



Give the uses of the icons labeled A and B **(2mks)**

5. Define the following terms as used in disk management

i) Partitioning **(2mks)**

ii) Defragmentation **(2mks)**

6. State three ways in which your school librarian can use a computer **(3mks)**

7. i) Write the acronym UPS in full? **(1mk)**

ii) Explain the uses of UPS? **(1mk)**

8. a) Give two possible ways of fitting the document in one page **(2mks)**

b) The shopkeeper one day switched on the computer and experienced a number of problems with windows operating system that he had installed. The problems included failure to load the operating system during the booting. After several trials of switching on the computer booting. It hand so often alongside abnormal restarting. State any two possible causes for the computer's behavior. **(2mks)**

9. Differentiate between real time processing and batch processing giving examples where each could be used. **(4mks)**

10. In Kenya Tea Packers Company several people are employed as record clerks., typists and messenger. The company intends to introduce a computerized system in all the departments. Suggest three reasons that would make workers unhappy with the new system. **(3mks)**

11. Give two advantages of an electronic spreadsheet over traditional analysis ledger sheet **(2mks)**

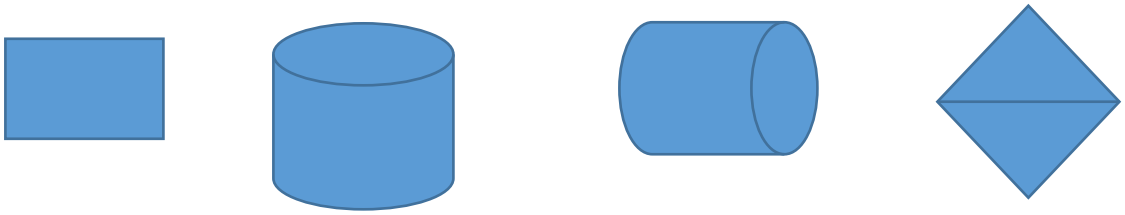
12. Explain the following terms as used in information Technology with reference to software purchase:-

i) User friendliness **(1mk)**

ii) Authenticity **(1mk)**

13. While purchasing computers for his school the principal Isaboke high school decided to consult an expert. As a computer student advised him on four hard ware considerations **(2mks)**

14. Give the names of the following system flowchart symbols **(2mks)**



A **B** **C** **D**

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

SECTION B (60 MARKS)

Answer question 16 and any other three questions from this section

16. a) State three qualities of a good pseudo code? **(3mks)**

b) i) State the 3 translators used in programming **(3mks)**

ii) List two examples of;

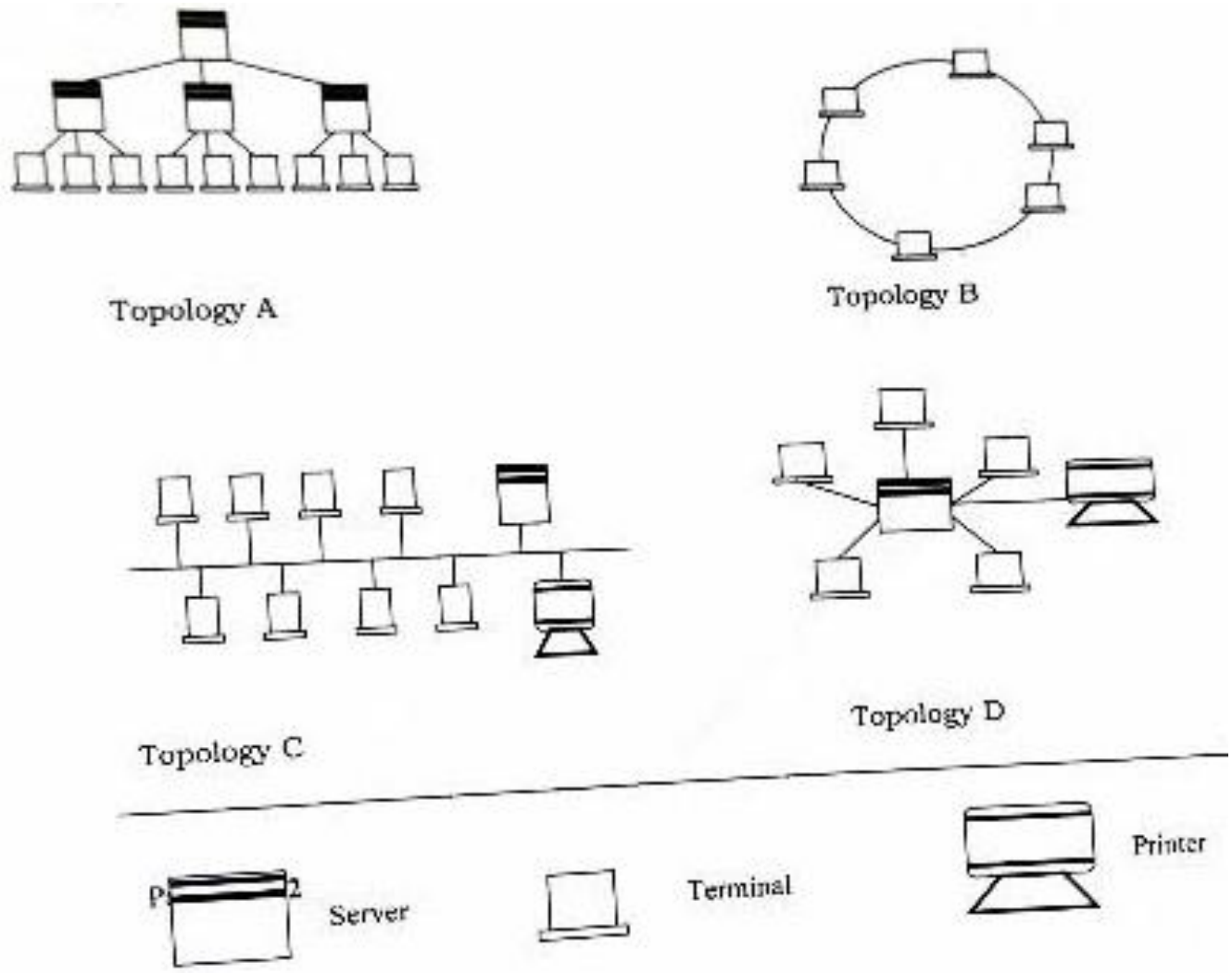
i. Third generation languages **(1mk)**

ii. Object oriented languages **(1mk)**

c) Draw a flowchart that was used to come up with the following pseud code **(7mks)**

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

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



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

ii) Explain what happens if server X topology A fails **(1mk)**

iii) List two problems associated with network topology B **(2mks)**

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

b) Differentiate between Internet and World Wide Web. **(2mks)**

c) Convert the following binary number, 11001011.001 into decimal form. **(4mks)**

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

b) What are hard information systems **(2mks)**

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

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

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

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

i) Firmware

ii) Proprietary software

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

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

i) Cell

ii) Range

iii) Value

iv) Function

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

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

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

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

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

Using the above worksheet write the following formula to calculate the values in cells labeled

(4mks)

KCSE 2025 TOP SCHOOLS MOCKS

NATIONAL TRIAL 9

451/2

COMPUTER STUDIES

PAPER 2

TIME: 2½ HOURS

NAME……

SCHOOL…… **SIGN**……

INDEX NO…… **ADM NO**……

Kenya Certificate of Secondary Education.

INSTRUCTIONS TO CANDIDATES

d) *Type your name and admission number at the top right hand corner of each printout.*

e) *Write the name and version of the software used for each question attempted in the answer sheet.*

f) *Passwords should not be used while saving in the diskettes.*

g) *Answer all questions*

h) *All questions carry equal marks*

i) *All answers must be saved in your diskette. Make printouts of the answers on the answer sheets provided.*

j) *Hand in all the printout and the diskette*

k) *Candidates may be penalized for not following instruction given in this pager*

l) *Arrange your printout and staple them together.*

QUESTION 1

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

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

Carpenter Table

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

Customer Table

Order Table

CARPENTER _ID	CUSTOMER _ID	ORDER _NO	ITEM ORDERED	MONTH	AMOUNT
CAP_001	CUST _01	1721	Bench	January	18,000
CAP_002	CUST _02	1722	Coffee table	January	25,000
CAP_003	CUST _03	1723	Office table	January	10,000
CAP_004	CUST _04	1724	Single bed	January	18,000
CAP_005	CUST _05	1725	Arm chair	January	60,000
CAP_001	CUST _01	1726	Double bed	February	75,000
CAP_002	CUST _04	1727	Dining table	February	85,000
CAP_004	CUST _03	1728	Arm chair	February	60,000
CAP_001	CUST _02	1729	Double decker bed	February	72,000
CAP_002	CUST _06	1730	Kitchen table	February	82,000
CAP_004	CUST _02	1731	Bench	March	18,000
CAP_003	CUST _06	1732	bench	march	18,000

a) i) Using database application package, create a database file named;

CARPENTERINFORMATION **(1mk)**

ii) Create three tables named **Carpenter Table, Customer Table** and **Order Table that will be used to store the above data.** **(10mks)**

iii) Set the primary key for the tables **(2mks)**

iv) Create relationship among the tables **(2mks)**

b) i) Create a data entry form for each table **(3mks)**

ii) Enter the data in **Carpenter Table, Customer Table and Order Table** respectively **(11mks)**

c) i) Create a query named **individual income** to display the amount received from each customer every month. **(4mks)**

ii) Create a database object that computers Total income for each month. Save the query as **Totalincomenomnthly.** **(6mks)**

d) Create a query named **loyalty** to compute the total number of orders made by each customer over the three months. **(3mks)**

e) Create a report to display order details, save the report as Order report **(4mks)**

f) Print the three tables and the report **(4mks)**

QUESTION 2

Use a spreadsheet to manipulate data in the table below.

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

C010	Simiyu	H	85	46	78	52	53		
	TOTAL								
	TOTAL	FOR H							
	TOTAL	FOR K							

a) Enter the data in all bordered worksheet and auto fit all column. Save the workbook as **mark 1** **(15mks)**

b) Find the total marks for each subject **(3mks)**

c) Find total for each subject per stream using a function **(5mks)**

d) Find mean mark for each student using a function **(5mks)**

e) Rank mean student in descending order using the mean **(5mks)**

f) Create a well labeled column chart on a different sheet to show the mean mark of every student. Save the workbook as **mark 2.** **(7mks)**

g) Using **mark1,** use subtotals to find the average mark for each subject per stream. Save the workbook as **mark 3** **(7mks)**

h) Print **mark 1,mark 2** and the **chart**

KCSE 2025 TOP SCHOOLS MOCKS

NATIONAL TRIAL 10

451/1

COMPUTER STUDIES

PAPER 1

TIME: 2½ HOURS

NAME……

SCHOOL…… **SIGN**……

INDEX NO…… **ADM NO**……

Kenya Certificate of Secondary Education.

INSTRUCTION TO CANDIDATES

b) *Write your name and index number in the spaces provided above*
c) *This paper consists of **Two** sections **A** and **B***
d) *Answer **ALL** questions in section **A***
e) *Answer question16 and any other **THREE** questions from section **B***
f) *All answers should be written in the spaces provided on the question paper*

FOR EXAMINER'S USE ONLY

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

SECTION A (40 MARKS)

Answer ALL the questions in SECTION

1. A programmer always uses command line operating system more than the other types of operating systems. State two reasons why he likes this type of operating system **(2marks)**
2. Biometric systems is used for both physical and data security. State three disadvantages of using biometric systems (**3marks**)
3. What is automatic recalculation **(2marks)**
4.

(a) State three causes of data loss in computing **(3marks)**

(b) List two precautions taken against crashing of hard disk **(2marks)**

5. Differentiate between COM ports and LPT ports **(2marks)**
6. Describe three main parts of a file Name **(3marks)**
7. Ventilation is an important practice in the computer lab because it enhances proper circulation of air. Outline three ways in which air is regulated in the computer room. **(3marks)**
8. Warranty must be signed during the purchase of a computer. Name three items a buyer must consider before signing the warranty **(3marks)**
9. Mention two cause of system entropy **(2marks)**
10. Explain why two's complement is preferred to one's complement in computing. **(1marks)**
11. Computers have evolved through a number of generations. List three limitations of the first generation of computers. **(3marks)**
12. Identify the type of operating system represented in Figure 1 and 2 **(2marks)**

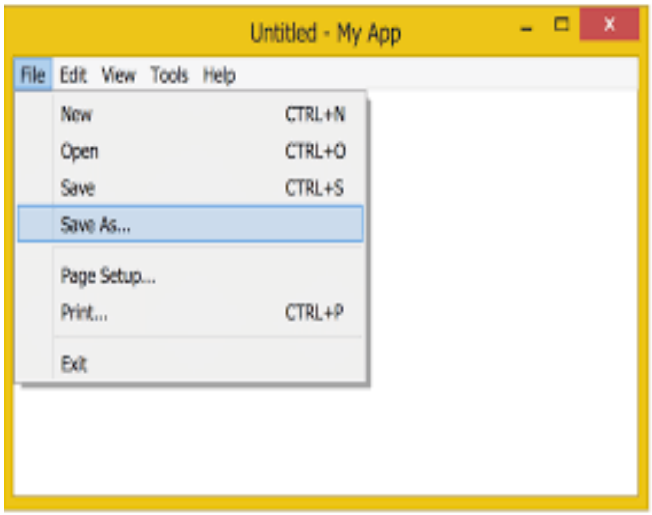


Figure 1

Figure 2

13. Give two benefits of writing a program in Low Level programming Language **(2marks)**

14. State four function of an operating system in respect to disk management **(4marks)**

15. Due to rapid changes in Technology the World is slowly moving from the magnetic and optical storage devices to solid state storage devices

(a) Define the term solid state storage devices **(1mark)**

(b) Give two advantages of solid state storage devices **(2marks)**

SECTION B (60 MARKS)

16.

(a) State three basic types of program control structures **(3marks)**

(b) Mention three causes of syntax errors **(3marks)**

(c) An organization intends to increase salaries of employees using the following rates

Current Salary	Percentage Increase
Greater than or equal to 70000	5%
Greater than 50,000 and less than 70,000	8%
Less than or Equal to 50,000	10%

Design a flowchart that reads the total population of the employee in the organizatio n and the perform the following for each employee **(9marks)**

- Read the current salary

- ❖ Compute the increment
- ❖ Display current Salary , Increment and the new salary

17.

(a) Convert the following numbers to their decimal equivalent **(6marks)**

(i) 11.011_2

(ii) 12.15_8

(iii) A1H

(b) Outline four ways in which data integrity may be maintained **(4marks)**

(c) Explain three advantages of using questionnaires as a fact finding tool**.** **(3marks)**

(d) What is the role of a recycle bin **(2marks)**

18.

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

(4marks)

(b) What do the following terms mean in relation to internet? **(5marks)**

Downloading

Hyperlink

Web browser

ISP

Search engine

(c) Differentiate between sorting and filtering as used in electronic spreadsheet program **(2marks)**

(d) What do the following terms mean **(4maks)**

(i) Spam mails

(ii) Inbox

(iii) Onboard Modem

(iv) WIMP

19.

(a) Mention three types of database model **(3marks)**

(b) List three advantages of using database management systems **(3marks)**

(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: **(3marks)**

(i) Domain Integrity

(ii) Entity Integrity

(iii) Referential Integrity

(d) Use diagrams to describe the following types of relationships **(3marks)**

(i) One to One

(ii) Many to Many

(iii) One to Many

(e) File organization refers to the arrangement of records on secondary storage. Briefly describe the following file organization methods. **(3marks)**

(i) Serial

(ii) Sequential

(iii) Random

20.

(a) What is a website **(2marks)**

(b) Name three facilities that are needed to connect to the internet**.** **(3marks)**

(c) State three ways students can benefit by having internet in a school **(3marks)**

(d) State the function of the following protocols **(3marks)**

(i) TCP

(ii) IP

(iii) POP3

(e) Describe the following topologies **(4marks)**

(i) Ring

(ii) Mesh

KCSE 2025 TOP SCHOOLS MOCKS

NATIONAL TRIAL 10

451/2

COMPUTER STUDIES

PAPER 2

TIME: 2½ HOURS

NAME……

SCHOOL…… **SIGN**……

INDEX NO…… **ADM NO**……

Kenya Certificate of Secondary Education.

INSTRUCTIONS TO CANDIDATES

a) *Indicate your name and index number at the right hand corner of each printout*

b) *Write your name and index number on the CD/removable storage medium provided*

c) *Write the name and version of the software used for each question attempted in the answer sheet provided*

d) *Answer all the questions, All questions carry equal marks*

e) *Passwords should not be used while saving in the CD/removable storage Medium*

f) *Marked printout of the answers on the sheet*

g) *Hand in all the printouts and the CD/removable storage medium used*

QUESTIONS

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.*** *(3 marks)*

(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)**

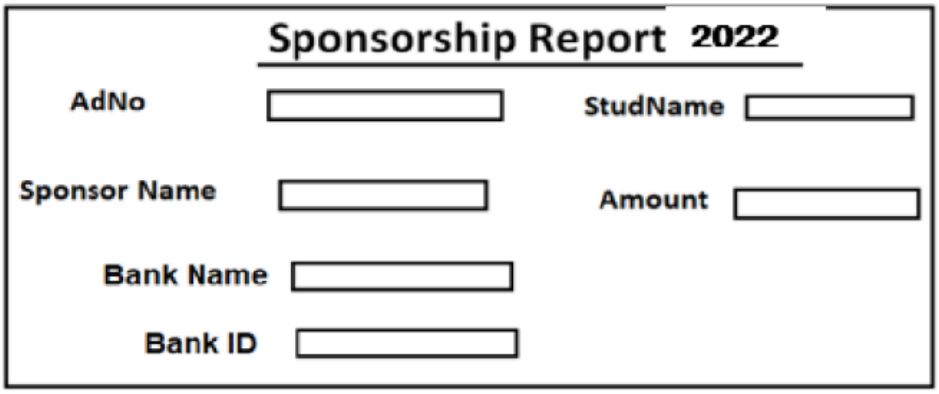
(ii) StdName, Sponsor name, Mode of payment and Amount per student. Calculate the total amount received. Save query as **AMount-query**. **(5marks)**

(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;

THE END

FOR THE FOLLOWING;

- ONLINE TUITION
- REVISION NOTES
- SCHEMES OF WORK
- SETBOOKS VIDEOS
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- KCSE PREMOCKS
- TOP SCHOOLS PREMOCKS
- JOINT PREMOCKS
- KCSE MOCKS
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