KCSE 2024 REPLICA

COMPUTER STUDIES

(PREDICTION EXAMS 1-10)

Confidential set of Possible Questions likely to be examined in the forthcoming Final Examinations. A Projection of what is likely to be tested in the much-awaited KNEC Exams scheduled for November 2024.

The following are Questions to expect in KCSE 2024 EXAMS.

CONFIDENTIAL!

For Marking Schemes
Mr Isaboke 0746 222 000 / 0742 999 000

THE KEY TO SUCCESS!

KCSE 2024 REPLICA PREDICTION

(POSSIBLE TRIAL 1)

COMPUTER STUDIES

451/1

PAPER 1

TIME: 2½ HOURS

NAME……

SCHOOL…… **SIGN**……

INDEX NO…… **ADM NO**……

Kenya Certificate of Secondary Education.

Instructions to Candidates

i) *Write your name and admission number in the spaces provided above.*

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

iii) *Answer **ALL** the questions in section **A**.*

iv) *Answer **question 16 (compulsory)** and any other **THREE** questions from section **B**.*

v) ***All** answers should be written in the spaces provided.*

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 this section

1) For each of the following computer generations, state the technology used to control the internal operations. **(2marks)**

a) 1st generation:

b) 2nd generation:

c) 3rd generation:

iv) 4th generation:

2) State **three** ways in which computers have been used to fight the spread of corona virus in Kenya. **(3marks)**

3) Define two types of booting in computer. **(2 marks)**

4) Explain the term **"log on"** as applied in internet **(2marks)**

5) a) What is disk formatting? **(1mark)**

b) State **two** reasons for disk formatting **(2 marks)**

6) State a stage in system development life cycle where each of the following activities are carried out:

a) identifying the technologies that may be used in a proposed system; **(1 mark)**

b) identifying shortcomings of a system; **(1 mark)**

c) Preparing a system for migration plan. **(1 mark)**

7) State **three** reasons why an organisation may opt to develop its own software in-house rather than buy off-the-shelf software. ***(3 marks)***

8) A particular computer stores numbers in a single 8-bit word. How would it represent? $\mathbf{0.3125_{10}}$ **(3marks)**

9) A computer technician found it necessary to disable a firewall when working on a computer system.

(a) What is a firewall? **(1mark)**

(b) State **two** reasons that may have necessitated disabling of the firewall**.** **(2marks)**

10) Differentiate between absolute cell references and relative cell references as applied to spreadsheets. **(2 Marks*)***

11) Mwanzo Micro finance organization has offices in Kericho and Nairobi connected into a network. The management is convinced that someone is illegally gaining access to the data in their computers. State **three** ways the company can overcome this problem. **(3marks)**

12) The following worksheet represents the number of litres of milk produced by different cows' species at Kajiado Ranch Ltd.

s/no	A	B	C	D	E
1	**Month**	**Friesian**	**Ayrshire**	**Guernsey**	
2	Jan	70	80	65	
3	Feb	120	62	75	
4	Mar	110	65	45	
5	Apr	70	45	60	
6					

The cost of each litre of milk is **Kshs.30/=.** This amount is typed in cell **B10**

1) Write a **function** that will calculate the total number of liters of Friesian in all the months. **(1mark)**

2) Write a **formula** that can be typed in cell **E2** and then be copied down to obtain monthly sales of milk. **(1mark)**

(a) **Identify** the data type in cell **C1** and cell **D3** **(1mark)**

13). State **three** main types of looping control structures as used in **programming.** **(3 marks)**

14) A school intends to install wireless media in their communication system.

a) State any **two** types of wireless communication media. ***(1mark)***

b) Give **two** advantages of this mode of communication media. ***(2marks)***

15) State the functions of the following keys on the computer keyboard:

(a) Backspace **(1 mark)**

(b) Tab key **(1 mark)**

SECTION B (60 MARKS)

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

16) (a) What is meant by each of the following terms as used in programming. **(3marks)**

(i) Pseudocode

(ii) Flowchart

(iii) Dry run

(I) Outline **two** disadvantages of low level programming languages. **(2marks)**

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

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

(IV) Draw a flowchart for the above pseudocode **(4marks)**

17)(a) State **three** limitations of traditional filing methods **(3marks)**

(b) Below are two table structures of files in a database.

TABLE A

FIELD	DATA TYPE
Employee name	Text
Employee number	Auto number
DOB	Date/time
Address	Text

TABLE B

FIELD	DATA TYPE
Employee no.	Number
Date employed	Date/time
Department	Text
Salary	Currency

i) Which of the **two** tables is likely to be the parent table **(1mark)**

ii) It is advisable to **'enforce referential integrity'** when creating a relationships. What do you understand by the term referential integrity? **(2marks)**

iii) The field **'Employee no'** in **TABLE B** is likely to be the foreign key. What is a foreign key? **(2marks)**

iv) Which fields in both tables is most appropriate for creating **relationship?** **(1mark)**

v) What would make the relationship between the tables fail to work? **(2marks)**

c) In databases the field properties specify finer details related to the fields and the table entries expected. State **four** field properties in database. **(4marks)**

18)(a) Describe any **two** characteristics octal number system. **(2marks)**

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

i) 111.101_2 to decimal **(3marks)**

ii) 14.6875_{10} to binary **(4marks)**

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

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

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

d) Perform the arithmetic operation.

$110.11_2 + 11.011_2$ **(2marks)**

19)a) distinguish between Computer Aided Instructions (CAI) and Computer Aided Learning(CAL) (4marks)

(b) i) State **four** activities that may be carried out when disposing off an old system in an organization. **(4 marks)**

ii) State **four** ways of getting user specifications during system design**.** **(4 marks)**

(c) State any **three** reasons why people may resist the introduction of computers at their place of work **(3 marks)**

20)a) State the role of each of the following data communication devices:

i) repeater; **(1mark)**

ii) router. **(1mark)**

1) Figure 3 shows a network based on the bus topology

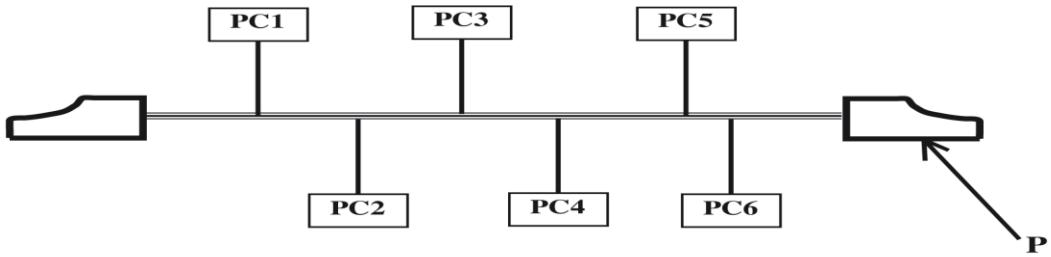


Figure 3

- Identify the component labelled p **(1mark)**
- State the function of component labelled p **(2marks)**

2) Students of Neema secondary school formed an environmental club with a goal of taking part in environmental conservation activities. Outline **three** ways in which they can use the internet to achieve this goal. (3marks)

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

a) List three ways by which parents can protect their children from accessing inappropriate content from the internet**.** **(3 marks)**

This is the last printed page.

KCSE 23

KCSE 2024 REPLICA PREDICTION

(POSSIBLE TRIAL 1)

COMPUTER STUDIES

451/2

PAPER 2

TIME: 2½ HOURS

NAME……

SCHOOL…… **SIGN**……

INDEX NO…… **ADM NO**……

Kenya Certificate of Secondary Education.

Instructions to candidates

a) Type your Name and Index No at the top right hand corner of each printout.
b) Write your **Name** and **Index No** on the **CD**
c) Write the Name and version of software used in each question on the answer sheet
d) Passwords should not be used
e) Answer **ALL** the questions
f) All answers must be saved in a **CD**
g) Make printouts of the answers

QUESTION	MARKS
QN1	
QN2	
TOTAL	

QUESTION ONE

Tip Top consultants has shortlisted candidates for an interview for various positions in their organization. The following is a standard letter for each of the candidates to be interviewed.

The information enclosed in << >> represents details about recipients, position, date and time of the interview.

a) Using a word processor, type the documents as it appears and save it as **letterMain (16 marks)**

Tip Top consultants

Top Human Resources Consultants

P.O. Box 456, Tel: 03221345

Nairobi. Email:info@tiptop.co.ke

Monday, 11 April 2015.

<< First Name >> << Second Name >>,

P.O. Box << Adress>>,

<< Town >>.

Dear<<Title>> << Second Name>>,

RE: INVITATION FOR AN INTERVIEW

Following your application for the position of << Position >>, I am glad to inform you that you have been shortlisted. You will be required to report for an interview on <<Date>> at <<Time>>. You are required to bring the following documents with you.

(i) Identity card

(ii) Original certificates

(iii) Two passport size photographs

(iv) A reference letter

We are looking forward to seeing you.

Yours faithfully,

Pascal Sasha

Consulting partner

b) Insert the following as a footer:

Vision: "To *be a leader in the provision of quality Human Resource for development*"

(2 marks)

c) Create the logo in Figure 1 and position it below the statement 'Top Human Resources Consultants'. (6 marks)

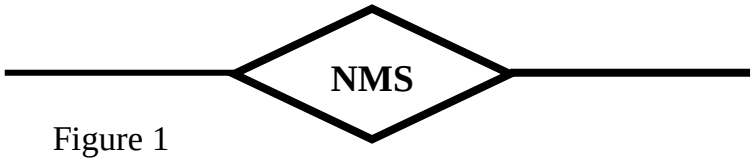


Figure 1

d) Table 1 shows details about shortlisted candidates. Create a data source to store information in the table and save it as **ListFile**. (11 marks)

Title	First Name	Second Name	Address	Town	Position	Date	Time
Miss	Anyango	Patricia	3656	Kisumu	ICT Assistant	6th Dec	11:30 am
Ms	Caroline	Kandai	3456	Kajiado	Accountant	6th Dec	12:30 pm
Mr	Zachary	Esokon	123	Lodwar	ICT Assistant	7th Dec	1:30 pm
Mrs	Susan	Chemutai	721	Kericho	Accountant	7th Dec	2:30 pm
Mr	Jilo	Buya	222	Mombasa	Accountant	8th Dec	12:00 pm
Mr	Sospeter	Kamau	912	Kiambu	Accountant	9th Dec	12:30 pm

Table 1

e) Using mail merge feature, merge the files **letterMain** and **ListFile** and save the document as **Merged Document.** **(5 marks)**

f) Insert page numbers at the top right hand sight in the merged document saved in (e) above **(2 marks)**

g) Using **listfile** as a data source, create a list of addresses to be printed on envelops as shown in figure 2 and save it as **envelopes.** **(4marks)**

<< Title>> << First Name>> << Second Name>> ,

P.O. Box <<Address>>,

<<Town>>.

Figure 2

h) Print the following: (4marks)

1. Lettermain

2. Listfile

3. Page 5 of the merged document

4. Addresses to be printed on the first envelope.

QUESTION TWO

Company XYZ sells products P, Q and R. figure 3 shows an extract of a spreadsheet for the company's salespersons and their respective sales in shillings for each product.

	A	B	C	D	E	F	G	H
1	**SALES PERSON**	**PRODUCT P**	**PRODUCT Q**	**PRODUCT R**	**TOTAL SALES**	**POINTS**	**CATEGORY**	**TOTAL PAY**
2	Clifford	4,000.00	6,230.00	7,500.00				
3	Kamau	4,500.00	6,700.00	8,000.00				
4	Shantel	5,678.00	10,000.00	7,800.00				
5	Melinda	3,200.00	4,000.00	9,600.00				
6	Kipkoech	8,000.00	7,005.00	8,900.00				
7	Wekesa	9,800.00	9,670.00	10,000.00				
8	Anyango	2,700.00	3,400.00	2,300.00				
9	TOTAL							

Figure 3

iii) i) Using a spreadsheet package, enter the above information and save it as **SALES-TABLE**

(9 marks)

ii) Format the worksheet to appear as it is. **(4 marks)**

iv) i) type a formula:

1. at cell B9 to compute the total sales for product P; **(1 mark)**

2. at cell E2 to compute total sales for Clifford. **(1 mark)**

ii) Apply the formulae to the appropriate cells. **(2 marks)**

v) A salesperson earns points for the sale of each product based on the following criteria;

b) 1 point for every shs 50 for product P,

c) 2 points for every shs 65 for product Q,

d) 3 points for every shs 40 for product R,

a) Type a formula in cell F2 to compute the total points earned by Clifford; **(3 marks)**

b) Apply the formula in(c) (i) to the rest of the persons. **(1 mark)**

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

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

Those salespersons attaining a Gold category earn a promotion

a) Type a formula in G4 to determine Shantel's category. **(5 marks)**

b) Apply the formula in (d) (i) to other appropriate cells. **(1 mark)**

c) Type a formula in G10 to determine the number of salespersons who will earn a promotion. **(4marks)**

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

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

ix) Rename the worksheet containing the data as **salesData** and the chart sheet as **salesChart.** **(2 marks)**

x) Print the following: **(3 marks)**

a) SalesData;

b) SalesData showing the formula;

c) SalesChart

KCSE 2024 REPLICA PREDICTION

(POSSIBLE TRIAL 2)

COMPUTER STUDIES

451/1

PAPER 1

TIME: 2½ HOURS

NAME……

SCHOOL…… **SIGN**……

INDEX NO…… **ADM NO**……

Kenya Certificate of Secondary Education.

INSTRUCTIONS TO CANDIDATES

- Answer **ALL** the questions in **section A**
- Answer **question 16 (compulsory)** and **ANY OTHER THREE questions** from **section B.**

For Official Use Only

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

SECTION A(40 MARKS)

Answer ALL questions in this section in the spaces provided.

1. Define term artificial intelligence. **(1mk)**

2. List three roles of system analyst. **(3mks)**

3. Outline three way IEBC will use technology to ensure free and fare election. **(3mks)**

4. Write the following acronyms in full

(i) WIFI

(ii) HDMI

5. a) List two reasons why USB interface has become popular than other interfaces**.** **(2mks)**

b) Give three disadvantage of using serial file organisation. **(3mks)**

6. Name three common malicious programs that are harmful to computers. **(3mks)**

7. Define the term deadlock as used in operating system. **(1mk)**

8. Give any three categories of functions that are available in ms excel. **(3mks)**

9. Differentiate between count and count if functions as used in ms excel. **(2mks)**

10. Explain why liquid-based powder fire extinguishers are discouraged in a computer laboratory. **(2mks)**

11. Explain the following terms as used in computer crimes. **(2mks)**

(i) Piracy

(ii) Industrial espionage

12. List three advantages of using fibre optic cable in networking. **(3mks)**

13. Explain two database models. **(4mks)**

14. a) Give three ways in which ICT can be used to conserve forests. **(3mks)**

b) Give three factors to consider when selecting ICT related career. **(3mks)**

15. List four sub categories of system software. **(4mks)**

SECTION B (60 MARKS)

Answer question 16 and any other three questions in this sections.

16. a) List two examples of

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

(ii) Object oriented programming languages **(2mks)**

b) Differentiate between source code and object code. **(2mks)**

c)Draw a flow chart that will take two numeric values X and Y . compare the two numbers to give the following output:

If X is more than Y, the program should compute the difference of the two numbers.

If X is less than Y, the program should compute the sum of the two numbers.

If X is equal to Y, the program should compute the product of the two numbers. **(7mks)**

a) List two repetitive control structures. **(2mks)**

17. a) Differentiate between the following as used in data communication.

(i) Baseband and broadband **(2mks)**

(ii) Multi-plexing and demulti-plexing **(2mks)**

b) ABC company intends to start their operations across all the East African Countries.

(i) Recommend to them the most ideal computer network that they should use. **(1mk)**

(ii) List three challenges the company is likely to encounter while using the network. **(3mks)**

(iii) With an example state three networking elements that the company will need for them to implement the network. **(6mks)**

c) Give one advantage of using unbound media for networking. **(1mk)**

18. Study the worksheet below and answer the questions that follow.

1	A	B	C	D	E	F
2	**SKY WAYS AGENCIES**					
3	Product	Region 1	Region 2	Regions 3	Region 4	TOTAL
4	Rexona	3400	3700	4000	4100	
5	Lifeboy	2500	2600	2100	2500	
6	Omo	6000	6100	6300	1600	
7	Ushindi	1200	1500	1400	6400	
8	Carmel	7000	6900	7200	8000	
9	Total					
10	Maximum					
11	Average					

a) Write functions that can be entered to get total, maximum and average of each region. **(3mks)**

b) Write down the function that returns the number of sales in the four regions whose values is greater than or equal to 2000. **(2mks)**

c) The prices for region 4 were reduced with n% value which was placed in cell C13. Write a formulae to calculate the new price of product Rexona and applied to other products in the same region. **(3mks)**

d) Differentiate between stroke and fill as used in D.T.P **(2mks)**

e) i) Define text wrap **(1mk)**

(ii) List four ways you can wrap text on an object. **(4mks)**

19. a) State three ways in which a signed binary number can be represented. **(3mks)**

b) Convert the following numbers into binary form

(i) 247_{10} **(2mks)**

(ii)$9AC_{16}$ **(2mks)**

c) Using two complements compute $27_{10} - 13_{10}$ and leave your answer in binary form(use 8 bits) **(3mks)**

d) Differentiate between logical file and physical file. **(2mks)**

e)Explain three parameters that can be used to measure data integrity. **(3mks)**

20. a) i) State the importance of information fact finding in system development. **(1mk)**

(ii) State any two advantages and two disadvantages of using interview method for information gathering. **(4mks)**

b)Explain three system development theories and methods. **(6mks)**

c) Your school wishes to replace the original system with an information system.

(i) With a reason, advise the school on the best change over strategy to implement. **(2mks)**

(ii) Give two challenges the school may encounter while implementing the new system.

KCSE 2024 REPLICA PREDICTION

(POSSIBLE TRIAL 2)

COMPUTER STUDIES

451/2

PAPER 2

TIME: 2½ HOURS

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

Kenya Certificate of Secondary Education.

INSTRUCTIONS TO CANDIDATES TO CANDIDATES

- *Type your name and index number at the top right hand corner of each printout.*
- *Write your **name** and **index number** on the CD-R or CD-RW provided.*
- *Write the name and version of the software used for each question attempted in the answer sheet.*
- *Answer **ALL the** questions*
- *All questions carry equal marks.*
- *All answers must be saved on the CD*
- *Hand in the prints and the CD*

1. a) Using a DTP program, design the publication using the sample given in the next page as your reference and save it as Youth Conference. **(36mks)**

In your design take into account the following.

b) - Page size $^1/_2$ A_4 side fold **(5mks)**

- Should be four pages
- Margins 1 inch all round.

c) The header "welcome all" should be font "old English " size 10. **(2mks)**

d) The pages should be numbered. **(2mks)**

e) The paragraph "YOUTH ANNUAL YOUTH SEMINAR"

Should : **(3mks)**

Font - Book Antiqua

Font - size 11

Double spaced

f) Print both sides f a paper. **(2mks)**

KCSE 23

KCSE 2024 REPLICA PREDICTION

(POSSIBLE TRIAL 3)

COMPUTER STUDIES

451/1

PAPER 1

TIME: 2½ HOURS

NAME……

SCHOOL…… **SIGN**……

INDEX NO…… **ADM NO**……

Kenya Certificate of Secondary Education.

INSTRUCTIONS TO CANDIDATES

- Answer **ALL** the questions in **section A**
- Answer **question 16 (compulsory)** and **ANY OTHER THREE questions** from **section B.**

For Official Use Only

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

SECTION A: (40 MARKS)

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

1. i) Explain the *emerging trends* in microcomputer technology in relation to Size **(1 mark)**

ii) Mention ***two*** Analogue devices **(2 marks)**

2. i) Identify and briefly describe **three** advantages of using computers in banking **(1½ marks)**

ii) State **two** advantages of using a mouse instead of a keyboard**.** **(1 mark)**

3. State two reasons why Magnetic tapes are not commonly used as computer data storage medium today **(1 mark)**

4. i) Give **two** advantages of the higher number of pixels per square centimeter. **(1 mark)**

ii) Differentiate between *Data interface cable* and *power cable.* (**1 mark)**

iii) Explain **two** differences between *serial* and *parallel* communication ports of a computer.**(2 mks)**

5. i) What is *line spacing* as used in word processing? **(½ mark)**

ii) Describe any **two** line spacing specification used in Microsoft Word. **(1 mark)**

iii) Name the ***two*** documents used in mail merge. **(1 mark)**

iv). With reference to the concept of graphics as used in Microsoft word. Explain the *difference* between object linking and embedding? **(1 mark)**

6. Who am I**?** **(3 marks)**

i) Am is skilled in software/program development as per requirement and technical operations of computer hardware. I also develop and update both system and application software together with the associated documentations.

ii) Am is skilled in designing computer hardware and also improves on existing ones.

i**ii)** I maintain, update & modify information on the websites to meet new demands by the users. I also monitor the access & use of internet connection by enforcing security measures

7. During the COVID 19 pandemic, the government advised the citizens to use electronic funds transfer and other popular mobile phone money transactions to make payments.

i) State *how* the above method of conducting business would help to curb on the spread of the disease**.** **(2 marks)**

ii) What is the meaning of *Electronic Funds Transfer*? **(1mk)**

8. Define the term *dual booting* as used in computing. **(1 mark)**

9. Differentiate between *cropping* and *grouping*. **(2 marks)**

10. Other than flow chart, state **two** tools that can be used to present an algorithm. **(2 marks)**

11. Differentiate between a *deadlock* and *interrupt* as used in operating system. **(2 marks)**

12. (a) Securem is a company that deals with providing security services to its clients. Name any ***two*** ways the company can protect its computer network from hackers. **(2 marks)**

(b) State **three** characteristics of a suitable password. **(3 marks)**

13. During system development the system analyst should consider the correct requirement specifications for the new system. State any **four** outcomes that may result from using incorrect requirement specifications. **(3 marks)**

14. (a) Define the term *Computer Aided Design*. **(1 mark)**

(b) List **two** advantages of using Computer Aided Design. **(2 marks)**

15. Explain **two** arithmetic errors that may occur during computerised data processing.**(2 marks)**

SECTION B (60 marks)

Answer q**uestion 16** and **ANY OTHER THREE** questions from this section in the spaces provided.

16. (a) Give **two** examples of syntax errors in programming. **(2 marks)**

(b)Scrabble™ is a word game where the players are awarded points by creating words from a combination of letters each of which carry a different point value. A player is awarded the points for creating words from the combination. Write a ***pseudocode using CASE*** to read a letter and output the value equivalent to that letter from the following table. **(8 marks)**

LETTER	VALUE
A,E,I,L,N,O,R,S,T,U	1
D,G	2
B,C,M,P	3
F,H,V,W,Y	4
K	5
J,X	8
Z,Q	10

(c) Classify the following programming languages according to their category: **(3 marks)**

Programming language	Category
HTML	
JAVA	
JAVASCRIPT	
PASCAL	
VISUAL BASIC	
LISP	

(d) With aid of a diagram, explain the "Repeat Until" construct as used in structured programming **(2 marks)**

17. (a) State the **stage** in system development life cycle where each of the following activities are carried out:

i. Identifying shortcomings of a system. **(1 mark)**

ii. Preparing the system migration plan **(1 mark)**

iii. Identifying the technologies that may be used in the proposed system. **(1 mark)**

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

(c) E-mail technology has become a very important part of today's communication. Explain any **three** problems associated with using e-mail technology for communication. **(6 marks)**

(d) Sarafina wants to download her favourite movie from YouTube. State any three factors that may determine how long it will take her to complete the download. **(3 marks)**

18. The following Digital Club Member details were to be entered in a database: Name, Date of registration, Registration fee and Class.

(a) Prepare a suitable structure showing field names and their field types **(4 marks)**

Field	Data type
Name	Text
Date of registration	Date
Registration fee	Currency or Number
Class	Text

(b) Name one other field that the Club Patron may need to add to uniquely identify the records **(1 mark)**

(c) Write the statement that can be used to select members of the class form 3. **(2 marks)**

	Name	Date of registration	Registration fee	Class
Criteria/ Expression				

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

	A	B	C	D
1	ITEM NAME	UNIT PRICE	UNITS SOLD	
2	HDD 300 GB	7,500	2	
3	Optical Drive	4,500	8	
4	DELL Latitude core i5	44,500	3	
5	DDR4 8GB RAM	10,000	4	
6	Lenovo Yoga Smart Tab	28,953	1	

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

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

(iii) Write the cell referencing used in c(ii) above. **(1 mark)**

(iv) Write the data type that is stored in cell C5 and A6 respectively **(2 marks)**

19. a) Define the term attenuation as used in networking and data communication. **(1 mark)**

b) The following are figures of networking cables. Identify each. **(2 marks)**



Figure 1

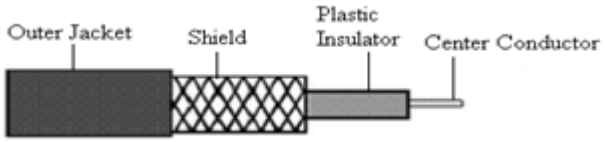


Figure 3

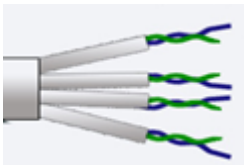


Figure 2

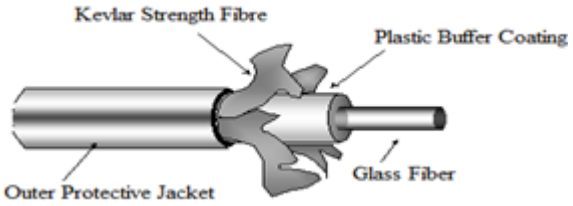


Figure 4

Figure 1 **Figure 2**

Figure 3 **Figure 4**

---

c) (i) Give **two** examples of network software **(2 marks)**

(ii) In a network setup, list any **two** items that may be referred to as data terminal equipment. **(2 marks)**

d) Explain the following terms as used in networking **(4 marks)**

(i) Remote Communication

(ii) Distributed processing

e) State **four** functions of a server in a network **(4 marks)**

20. (a) Determine the binary equivalent of the octal number 253243. **(2 marks)**

(b) Carry out the following binary arithmetic using *ones complement*. In each case leave your answer in ***base 10***.

(i) 10_{10}-10_8 **(5 marks)**

(i) 2BH-9H **(6 marks)**

(c) Arrange the following numbers in ascending order. **(2 marks)**

10_{16}, 10_{10}, 15_8, 1011_2

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KCSE 2024 REPLICA PREDICTION

(POSSIBLE TRIAL 3)

COMPUTER STUDIES

451/2

PAPER 2

TIME: 2½ HOURS

NAME……

SCHOOL…… **SIGN**……

INDEX NO…… **ADM NO**……

Kenya Certificate of Secondary Education.

INSTRUCTIONS TO CANDIDATES

- ***i.*** *Indicate your name and index number at the right hand corner of each printout*
- ***ii.*** *Write your name and index number on the CD/removable storage medium provided*
- ***iii.*** *Write the name and version of the software used for each question attempted in the answer sheet provided*
- ***iv.*** *Answer all the questions, All questions carry equal marks*
- ***v.*** *Passwords should not be used while saving in the CD/removable storage Medium*
- ***vi.*** *Marked printout of the answers on the sheet*
- ***vii.*** *Hand in all the printouts and the CD/removable storage medium used.*

FOR OFFICIAL USE ONLY

QUESTION	MAX SCORE	SCORE
ONE	50	
TWO	50	
TOTAL	**100**	

1. Matrix Enterprise invited schools for an annual software development contest. The following is a standard letter inviting schools for the contest.

MATRIX ENTERPRISE

Software Developers

27TH MARCH 2022

Dear Sir/Madam

RE: INTERSCHOOL ANNUAL SOFTWARE DEVELOPMENT CONTEST

We are pleased to invite your school for the **2022** edition of the **Annual software Development contest** to be held on May16th 2022 in our auditorium.

The contest will involve the following four (4) areas and each school is expected to pay participation fee as shown below per area.

Schools are encouraged to participate in many areas as much as possible. The best school will be awarded based on the cumulative marks from each area. Awards such as laptops, tablets, scholarships and cash prizes will be provided by Safaricom in conjunction with the sponsoring universities and other affiliated ICT Tech companies,

Participation Fee			
Area	**UNITS**	**COST**	**TOTAL COST**
Scratch programming	**10**	**2500**	
General ICT Knowledge	**5**	**2000**	
Binary coded arithmetic	**6**	**2800**	
Online gaming	**9**	**2000**	
Total Amount			

Note: A school can register as many developers per area.

Yours Sincerely

Peter Conrad

Master developer & Coordinator

(a) Using word processor prepare the document as it appears and saves it as **Matrix 1 (22 marks)**

(b) Set the working area as follows:

i) Page margins as follows: **(4 marks)**

- Top : 0.5" (1.27) cm
- Bottom: 0.5" (1.27) cm
- Gutter: 0.2" (0.51) cm

ii) Paper Size : A4 **(1 mark)**

(c) Format the heading "**MATRIX ENTERPRISE**" as follows: **(3 marks)**

- Alignment: Centre
- Font size: 36
- Font type: Algerian

(d) Insert header "Your name and Index number" **(2 marks)**

(e) Apply the following to the paragraph starting with "*The contest will involve the....*"

- First line indent By 1.2 (4.7"). **(2 marks)**
- Line spacing to 1.2 **(1 mark)**

(f) Format the text "**interschool annual software development contest**" as follows: **(3 marks)**

- Apply shadow
- **Font type**: Calibri
- Shade the text with any color

(g) Spell check your work **(1 mark)**

(h) Save the document as **Matrix II** **(1 mark)**

(i) Insert page numbering at the bottom center of each page. **(1 mark)**

(j) Compute the **total cost** for each area and the **total amount** in the table. **(2 marks)**

(k) Apply bullets to the list in the table. **(2 marks)**

(l) Convert all the text from the paragraph starting with "*Schools are encouraged to participate ….*" into two columns of the same width and height, with a line between the columns. **(3 marks)**

(m) Print the following: **(2 marks)**

(i) Matrix I

(ii) Matrix II

2. Due to the government directive on registration of all inhabitants of a country. County school directors were deployed to various schools within the Country. The worksheet below is a sample of the NEMIS registration data across the schools in Uasin Gishu County.

SCHOOL	**REGISTERED POPULATION**		**TARGET POPULATION**	**NON-REGISTERED**	**REG. FEES (shs)**
	MALE	FEMALE			
Jamboni	200,000	150,000	600,000		500
Sacho	230,000	312,000	457,000		700
Moi	450,000	352,252	1320,254		800
Kokwet	258,368	122,356	658,870		790
Rabai	325,620	104,520	700,658		450
Chepkube	123,863	80,588	325,789		700
Kabarak	136,222	150,520	356,102		450
Mbooni	253,666	210,000	492,250		250
Karo	253,666	213,650	700,000		400
TOTAL					
AVERAGE					

(a) Create a workbook to store information and save it as **NEMIS** in worksheet 1. (10 marks)

(b) Create a duplicate copy of Sheet1 and Paste it in sheet 2 ,rename worksheet 2 as **NEMIS 1** **(1 mark)**

(c) Use a formulae/function to compute:

(i) Non registered students per school **(3 marks)**

(ii) Introduce a new column called percentage **'(%) REGISTERED'** and use it to calculate percentage of registered students per school to 2 decimal places. **(5 marks)**

(d) Insert a new column after the registration fee and name it as **REMARKS**. Use the IF function to declare the following remarks about the % registered per school. (6 marks)

"Above expectation"	Above 90%
"Met Expectations"	70% - 89%
"Below Expectations"	20 % - 79%
" Report to The Office"	< 20%

(e) Use a function count the number of schools whose **% REGISTERED** is:

(i) Below expectations in cell **G18** **(2 marks)**

(ii) Use the function to fill the totals and averages in the table **(2 marks)**

(f) Format the workbook as follows

(i) Bold the titles and center it across the page in a merged cell and Times New Roman. (2 marks)

(ii) Apply border to a blank cell in the worksheet as follows

- ✓ Double line for the outer border,
- ✓ Dotted lines for the horizontal inside border
- ✓ Dashed lines for the vertical inside border. **(3 marks)**

(iii) Format the registration fees to Kshs. and give the sum of the registration fees **(2 marks)**

(g) Copy the entire **NEMIS 1** worksheet to a blank sheet and rename the new sheet as **NATIONAL NEMIS.** **(2 marks)**

(h) Design a bar graph of showing a comparison of both genders in all schools. Label the chart appropriately. Save it as **CHART**. **(5 marks)**

(i) Insert your name, date and index number as a header in each worksheet. Insert your class as a footer. **(4 marks)**

(j) Print **NEMIS 1**, **NATIONAL NEMIS** and **CHART** **(3 marks)**

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KCSE 2024 REPLICA PREDICTION

(POSSIBLE TRIAL 4)

COMPUTER STUDIES

451/1

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)**

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

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

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

16. Differentiate between the terms signal Attenuation and Noise as used in data communication.

(2mks)

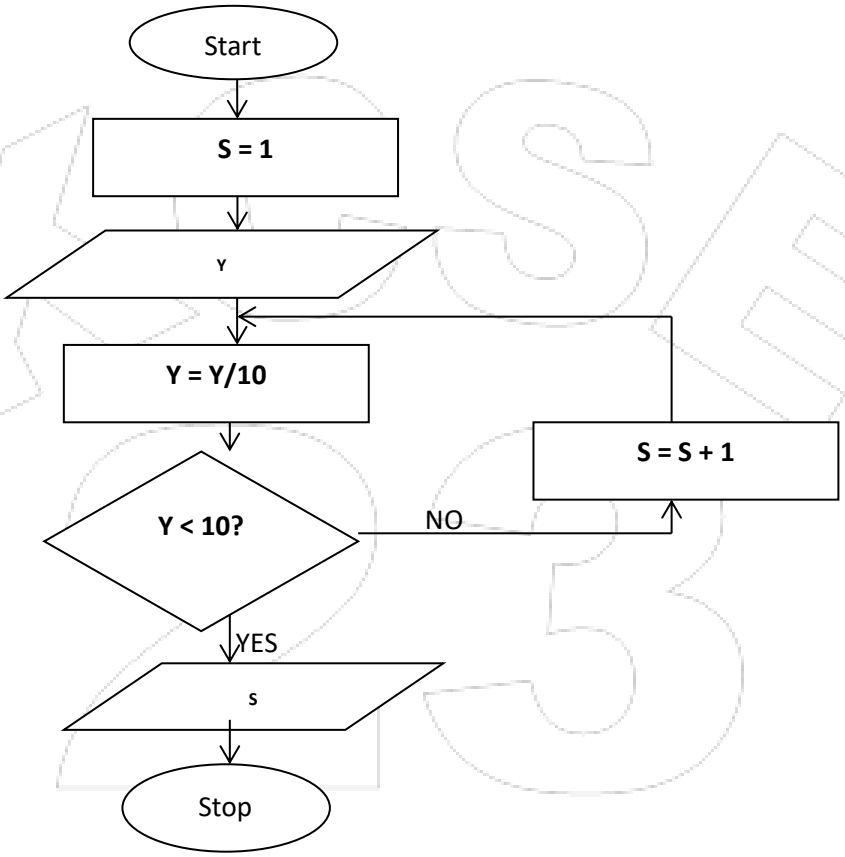
SECTION B

Answer question 16 and any other three questions in this section

17. 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 2024 REPLICA PREDICTION

(POSSIBLE TRIAL 4)

COMPUTER STUDIES

451/2

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 Ksh.120000	Beth Mugo P. O. BOX 5678 Migori Secretary Shs.30000	SharonWangoi P. O. BOX 5678 Nandi-Hills Accountant Shs.45000

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

(d) Print the notes. **(6mks)**

2. **(a)** Create a database called **SCHOOL**. **(2 Marks)**

(b) Create three tables **EXAMINATION**, **DOS** and **BOARDING** with the fields as shown below. **(10Marks)**

(c). Create a relationship between the three tables and enforce integrity. **(6Marks)**

(d). Enter the data items in the given tables three tables. **(15Marks)**

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

DOS				
Admission Number	**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 2024 REPLICA PREDICTION

(POSSIBLE TRIAL 5)

COMPUTER STUDIES

451/1

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 Number and Adm No in the spaces provided.*
- *This paper consists of TWO sections: A and B*
- *Answer **ALL** questions in section **A***
- *Answer question **16** and any other **THREE** questions from section **B***
- ***All** answers should be written in the spaces provided in the question paper*

For Examiners use only.

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

SECTION A (40 marks) *Answer all the questions in this section.*

1. Explain what is meant by the terms:- **(4 marks)**

i) FDD……

ii) HDD……

iii) CMOS……

iv) TFT……

2. Outline TWO application areas of Artificial Intelligence **(2 marks)**

3. State TWO ways of identifying an illegal copy of an Operating System **(2 marks)**

4. List any four publications that can be created using a Publishing application software **(2 marks)**

5. Describe a speech synthesis system **(2 marks)**

6. Find the Value of T_8 in the following binary equation: 110_{10}-AB_{16}=T_8 **(3 marks)**

7. State any TWO factors one would consider when selecting any data output device. **(2 marks)**

8. Input devices can be categorized according to how they are used to enter data namely keying devices, pointing devices, scanning devices, speech recognition devices and other digital devices. Give TWO examples each of the following devices.

(i) Scanning devices. **(1 mark)**

(**ii)** Other digital devices. **(1 mark)**

(iii) Pointing devices. **(1 mark)**

9. Describe the following types of monitors **(3 marks)**

a) Cathode Ray Tube(CRT)

b) Liquid Crystal Display (LCD)

c) Gas Plasma

10(a) State TWO functions of Read Only Memory (ROM) **(2 marks)**

(b) Give two characteristics of ROM **(2 marks)**

11. Explain the meaning of the following system characteristics. **(2 marks)**

i) Entropy

ii) Controls

12. Discuss TWO computational errors giving example in each case. **(4 marks)**

13. Differentiate between WORM and a VIRUS. **(2 marks)**

14. Differentiate sequential file organization from indexed sequential file organization**. (2 marks)**

15. Give any THREE functions of the central processing unit (CPU) **(3 marks)**

SECTION B (60 marks)

Answer questions 16(Compulsory) and any other three questions from this section.

16. a) Differentiate between Assembler and Interpreter as used in programming. **(2 marks)**

b) Give any THREE objectives that fourth génération programming languages were designed to meet**.** **(3mks)**

c) On the Nairobi-Nakuru highway, the Kenya Police have put speed cameras at a certain point to read the time a vehicle passes a point (A) on the road and then reads the time it passes a second point (B) on the same road. (Points A and B are 200 meters apart). The speed of the vehicle is calculated using:

- $\boldsymbol{Speed = \frac{100}{(time\ at\ point\ B - time\ at\ point\ A)}\ (Km/\ hr)}$
- *The maximum allowed speed is 100 kilometers per hour.*
- *500 vehicles were monitored using these cameras over a 1-hour period.*

(i) Write a pseudo code, which: **(5 marks)**

- Inputs the start time and the end time for the 500 vehicles that were monitored
- Calculates the speed for each vehicle using the formula above.
- Outputs the speed for each vehicle and a message if the speed exceeded 100 km/hour.

>=100km/hr "High Speed"

<100km/hr "Normal Speed"

PSEUDOCODE

(i) Draw a flow chart for the above pseudo code. **(5 marks)**

17.(a) Distinguish between the following sets of terms as used in spreadsheets

(i) Worksheet and workbook. **(2 marks)**

(ii) Filtering and sorting. **(2 marks)**

(b) State one way in which a user may reverse the last action taken in a spreadsheet package. **(1mark)**

(c)The following is a sample of a payroll. The worksheet row and column headings are marked 1,2,3…… and A,B,C……. respectively.

	A	B	C	D	E	F	G	H
1	**NAME**	**HOURS WORKED**	**PAY PER HOUR**	**BASIC PAY**	**ALLOWANCE**	**GROSS PAY**	**TAX DEDUCTION**	**NET PAY**
2	WAITHERA	21	750					
3	CHEPKOECH	28	850					
4	CHUMBA	14	550					
5	NKIROTE	20	1000					
6	NANA	23.5	250					
7	KIBET	25.5	500					
8	AUMA	14	250					
9	ATITWA	18	1500					
10	MOCHAMA	35	350					
	TOTALS							

Use the following expressions to answer the questions that follow

- Basic pay = Hours worked x pay per hour
- Allowances are allocated at 10% of basic pay
- Gross pay = Basic pay + allowances
- Tax deductions are calculated at 20% of gross pay.
- Net pay = Gross pay – tax deductions.

Write formulae using cell references for the following cells:

(i) D2…… (1mark)

(ii) E4……(1mark)

(iii) F10…….(1 mark)

(iv) G7…….(1 mark)

(v) H5…… (1 mark)

d) (i) State THREE ways of moving round a page in Desktop Publishing window. **(3 marks)**

ii) State TWO ways on how Information and Communication Technology (ICT) has been used to reduce the spread of COVID 19 **(2 marks)**

18. a.(i) List down THREE advantages of ATM cards. **(3 marks)**

(ii) State FOUR components of an electronics Point of Sale. **(2 marks)**

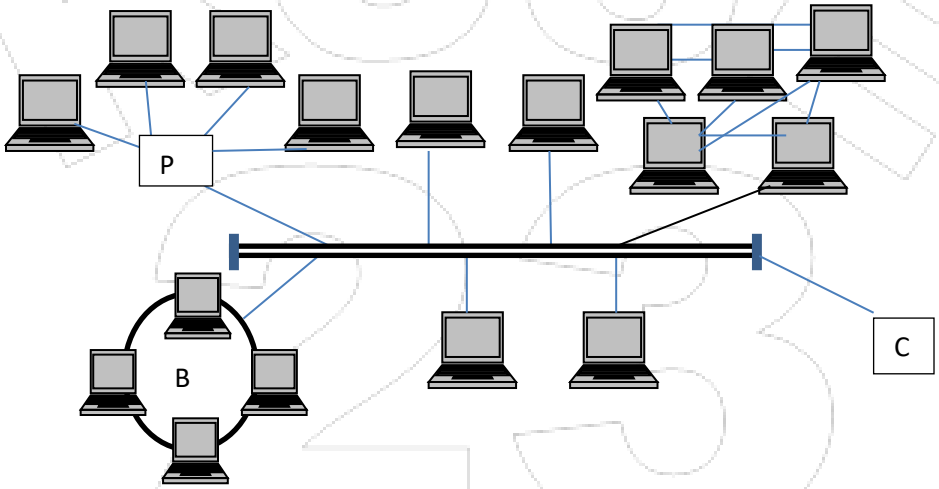
b. Give THREE reasons why a manager may prefer to teleconference during meetings. **(3 marks)**

c. Menengai Company would like to introduce use of a new information system. State THREE reasons why the company would like to introduce a new information system**?** **(3 marks)**

d. Once the whole system has been designed and constructed, it will need to be implemented. **Describe TWO** system changeover strategies that are likely to be used. **(4 marks)**

19.a) Explain why an intranet is more secure when sharing files within an organization compared to the internet. **(1 mark)**

b) The network setup below is formed by combining several LANS. Use it to answer the questions (i) – (v) below.



(i) Identify the network device P and C. **(1mark)**

(ii) State the importance of the network device P and C **(2 marks)**

(iii) What is the name given to the combined topology in figure above? **(1mark)**

(iv) Identify the network topologies used in the above diagram **(2marks)**

(v)**State TWO** disadvantages of topology connected to device P. **(2marks)**

c) A company has three branches M,N and O , where M is the headquarter. The local area network (LAN) at M is directly connected to LAN at N and directly connected to the LAN at O. **Explain two** benefits of having LAN at N also directly connected to the LAN at O. **(4 marks)**

d) The government of Kenya ordered all broadcasting TV stations to switch from analog transmission to digital TV transmission. **State two** benefits of digital transmission over analog transmission **(2 marks)**

20. a) Describe the following computer memories. **(2 marks)**

i. Register:

ii. Cache:

b. Explain Real-time Processing data processing mode giving TWO areas where it can be used. **(5 marks)**

c. Describe any TWO coding schemes used in Data representation **(4 marks)**

d. List FOUR devices controlled by the Operating System **(2 marks)**

e. Define a Laptop **(2 marks)**

KCSE 23

KCSE 2024 REPLICA PREDICTION

(POSSIBLE TRIAL 5)

COMPUTER STUDIES

451/2

PAPER 2

TIME: 2½ HOURS

NAME……

SCHOOL…… **SIGN**……

INDEX NO…… **ADM NO**……

Kenya Certificate of Secondary Education.

INSTRUCTIONS TO CANDIDATES

(a) *Type your name and index number at the top right hand corner of each print out*

(b) *Write your name and index number on the CD-R / CD-RW provided*

(c) *Write the name and version of software used in each question on the answer sheet*

(d) *Answer* ***ALL*** *the questions*

(e) *Passwords* ***should not be used*** *while saving in the CD-R*

(f) *All answers* ***MUST*** *be saved in the CD-R / CD-RW*

(g) *Make print out of answers on the answer sheet provided*

FOR EXAMINER'S USE ONLY

Question	Candidate's Score
1	
2	
Total Score	

1. The Judiciary Service Commission would like to conduct interviews on different shortlisted applicants.

Required.

(a) (i) Create the main document below as it appears and save it as **JLetter.** **(21 marks)**

JUDICIARY SERVICE COMMISSION,

P.O. BOX PRIVATE BAG-00100,

NAIROBI.

10th October, 2023.

<<First Name>> <<Second Name>>,

<<Postal Address>>,

<<City>>.

Dear <<Salutation>>,

RE: INVITATION TO AN INTERVIEW

This is to let you know that you have been shortlisted for an interview scheduled on <<date of visit>> at <<venue>> from <<Time>> for the <<Title>> position.

Please come with your:

(a) Original Identity Card

(b) Original Academic Certificates

(c) EACC Compliance Certificate

(d) Certificate of Good Conduct

(e) HELB Clearance Certificate

(f) KRA Compliance Certificate

A successful candidate will be entitled to the salary scales as shown in the table below:

TITLE	JOB GROUP	BASIC SALARY(KSH)
ICT OFFICE	TS III	102,050
CLERK	TS I	63,480
ACCOUNTANT	TS IV	90,345
TOTAL		255,875

We look forward to your attendance.

Yours sincerely

Chris Nyachoti.
Director

(ii) Proofread the document **(2 marks)**

(iii) Format 1.5 Line spacing in the body section **(2 marks)**

(b) Create a Data source below for the candidates and save it as **JRecipients** **(15 marks)**

First Name	Second Name	Postal Address	City	Salutation	Date Of Visit	Time	Venue	Title
Charles	Omukuba	P.O BOX 12	Busia	Sir	3rd November, 2023	11:00 am	Golf Club Hotel	ICT Officer
Grace	Kith	P.O BOX 102	Nairobi	Madam	2nd November, 2023	8:00 am	Serena Hotel	Clerk
John	Pilau	P.O BOX 38	Mombasa	Sir	4th November, 2023	9:00 am	Intercontinental hotel	Accountant
Peter	Gakere	P.O BOX 25	Laikipia	Sir	4th November, 2023	9:00 am	Intercontinental hotel	Accountant
Antony	Kipchoge	P.O BOX 57	Bomet	Sir	3rd November, 2023	11:00 am	Golf Club Hotel	ICT Officer
Gladys	Mutua	P.O BOX 27	Machakos	Madam	3rd November, 2023	11:00 am	Golf Club Hotel	ICT Officer
Gilbert	Muriithi	P.O BOX 18	Meru	Sir	2nd November, 2023	8:00 am	Serena Hotel	Clerk
Janet	Kati	P.O BOX 42	Turkana	Madam	4th November, 2023	9:00 am	Intercontinental hotel	Accountant

(c) Using mail merging, create a merged document and save it as **JSC_Merged**. **(4 marks)**

(d) Print the following documents

(e) **JLetter** **(2 marks)**

(f) **JRecipients** **(2 marks)**

(g) **Kith's and Kipchoge's letters only** **(2 marks)**

2. a) The MBORANU Hospital in your county would like to computerize their operations. They have consulted you to create a database and save it as **MBORANU Hospital.** **(2 marks)**

b) Create the two tables below with the shown fields. **(10 marks)**

(i) PatientsDetails Table

Field Name	Data Type	Field Size
PNO	Text	3
Patient Name	Text	30
Age	Number	Long integer
Residence	Text	15
City	Text	10
Gender	Text	2

(ii)MedicalRecords Table

Field name	Data type	Field size
PNO	Text	3
Doctor	Text	30
Diagnosis	Text	50
Treatment	Text	50
Bill Amount	currency	
Amount Paid	currency	

c) Set the Primary Key for each table **(2 marks)**

d) Using the appropriate fields create a relationship between the two tables. **(4 marks)**

e) Create forms for each table and save them appropriately. Use them to enter records into the respective table. **(10 marks)**

PatientsDetails Table

PNO	Patient Name	Age	Estate	City	Gender
001	John Kimanzi	19	Kinoo	Kiambu	M
002	Jane Wanjiru	37	Siaya	Kisumu	F
003	Jack Omondi	32	Mathare	Nairobi	M
004	Mary Kimani	42	Buruburu	Nairobi	F
005	Grace Banda	36	Donholm	Nairobi	F
006	Aaron Odhe	30	Mamba	Mombasa	M
007	Mary Otieno	29	Matuu	Kitui	F
008	Shah Vadgama	34	Parklands	Nairobi	M

MedicalRecords Table

PNO	Doctor	Diagnosis	Treatment	Bill	Amount Paid
003	Isaac Omondi	Malaria	Quinine	500	500
006	Grace Achuman	Depression	Antidepressants	2500	2000
004	Francis Kimani	Headache	Paracetamol	200	200
002	Alex Kioko	Appendicitis	Operation	10000	2000

f) Create a query to display:

i. All patients whose names end with letter **"i"**. Save the query as **Iquery** **(3 marks)**

ii. All patients whose age is above **30** and come from **Nairobi City.** Save the query as **Agequery** **(3 marks)**

g) Create a query to compute the balance of the bill amount and save it as **Balquery(4 marks)**

h) Create a report with the title "**2023 MBORANU PATIENTS REPORT**" used to display **PNO, Patient Name, Age, Doctor, Diagnosis, Treatment and Bill.** Save the report as **patients report** **(6 marks)**

i) Print

i. Patients_Details table **(2 marks)**

ii. Age query **(2 marks)**

iii. Patients report **(2 marks)**

KCSE 2024 REPLICA PREDICTION

(POSSIBLE TRIAL 6)

COMPUTER STUDIES

451/1

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 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.***
f) *All answers should be written in the space provided in the question paper.*
g) ***Candidates should answer the questions in English.***

FOR EXAMINER'S USE ONLY

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

SECTION A (40 MARKS)

Answer all question

1. In a computer class a teacher taught on removable storage media. State three precautions of preventing data loss in such media that the teacher may have mentioned. **(3 marks)**

2. What is the function of an antistatic wrist member? **(1 mark)**

3. Classify the following software's according to purpose. **(4 marks)**

	software	Classification
1.	Need for Speed Game	
2.	BIOS	
3.	Google Chrome Browser	
4.	Adobe InDesign 6	

4. Differentiate between Sequential file organization and indexed-sequential file organization. **(2 marks)**

5. List four threats to a computer system. **(4 marks)**

6. Distinguish between relative and absolute cell references as used in spreadsheet. **(2 marks)**

7. List three characteristics of a soft computer system. **(3 marks)**

8. Briefly describe two transcription errors. **(2 marks)**

9. a) List two advantages of secondary storage devices which make them indispensable part of a computer. **(2 marks)**

b) Give two reasons why magnetic tape is not a popular secondary storage device. **(2 marks)**

10. Define the following as used in word processing. **(2 marks)**

i) Word wrap**.**
ii) Drop Cap
iii) Orphan
iv) Widow-

11. Name the two common types of system units and differentiate them. **(2 marks)**

12. Without proper marketing, a business cannot survive in a competitive environment hence computers are being used in a number of ways to enhance marketing. List any three ways of ensuring this is effected. **(3 marks)**

13. Control unit is an essential component of the CPU. Describe the functions of the control unit. **(2 marks)**

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

15. (a) Differentiate between pasteboard and master page as used in DTP **(2 marks)**

(b) Differentiate between graphic-based and layout based desktop publishing software.**(2 marks)**

SECTION B (60 MARKS)

ANSWER QUESTION 16 AND ANY OTHER THREE QUESTIONS IN THIS SECTION

16. (a) Define the following terms as used in programming **(2 marks)**

i) Source code

ii) Object code

(**b) Differentiate** between Assembler and Interpreter as used in programming. **(2 marks)**

(c) Identify the type of programming language used in the codes below; **(1 mark)**

(i) 1101 1101 1011 1011

1110 0001 1100 0111

0010 1110 1011 0011

(ii) LDA A, 20

ADD A, 10

STO B, A

NOP

(d) On the Nairobi-Nakuru highway, the Kenya Police have put speed cameras at a certain point to read the time a vehicle passes a point (A) on the road and then reads the time it passes a second point (B) on the same road. (Points A and B are 200 meters apart). The speed of the vehicle is calculated using:

- $\boldsymbol{Speed = \frac{100}{(time\ at\ point\ B - time\ at\ point\ A)}\ (Km/\ hr)}$
- *The maximum allowed speed is 100 kilometers per hour.*
- *500 vehicles were monitored using these cameras over a 1-hour period.*

(ii) Write a pseudo code, which: **(5 marks)**

- Inputs the start time and the end time for the 500 vehicles that were monitored
- Calculates the speed for each vehicle using the formula above.
- Outputs the speed for each vehicle and a message if the speed exceeded 100 km/hour.

>=100km/hr "High Speed"

<100km/hr "Normal Speed"

(iii) Draw a flow chart for the above pseudo code. **(5 marks)**

17. a) Describe two health issues related to working with computers and give a remedy for each. **(4 marks)**

b) Robots are introduced into a factory which makes car engines. Describe three ways this could affect the workers. **(6 marks)**

c) List two duties performed by the following personnel **(2 marks)**

i) Database administrator

ii) Computer trainer **(2 marks)**

iii) Web administrator **(2 marks)**

18. a) Differentiate between a database and DBMS. **(1 mark)**

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

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

i) Validity integrity **(1 mark)**

i) Entity integrity **(1 mark)**

ii) Referential integrity **(1mark)**

d) Briefly describe any three database models. **(3marks)**

e) (i) Differentiate between error handling and interrupt handling as used in operating systems. **(2 marks)**

(ii) State **three** reasons why most network technicians prefer using command line operating systems to configure networking equipment. **(3 marks)**

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

(i) Network

(ii) Intranet

(iii) Browser

(b) The World Health Organization is global entity that deals with health issues around the world. It has computer networks linking its regional and continental offices using internet. State **two** importance of the internet to such organization. **(2 marks)**

(c) Mr. Zuma, the Principal of a school wishes his school to have an internet connection in a bid to improve its service delivery. Mention **four** internet connectivity requirements that must be present to enable the connection. **(2 marks)**

(c) Explain the following as used in e-mail:

- Inbox **(1 mark)**
- Drafts **(1 mark)**

(e) (i) Failure of information systems is a major concern in the security of data in computing systems. State **two** causes of such failure. **(2 marks)**

(ii) Explain the following computer crimes.

- Fraud **(1 mark)**
- Industrial espionage **(1 mark)**

(f) Excluding passwords, state **two** other security control measures used to guard against unauthorized access to computers in a network. **(2 marks)**

20. (a) Convert the 1010.011_2 to decimal equivalent. **(3 marks)**

(b) Perform the following number system conversions. **(3 marks)**

(i) 342.25_8 to binary.

(ii) 503_{10} to hexadecimal (**3 marks)**

(c) (i) Compute the binary arithmetic given below: **(3 marks)**

10111 + 10001 + 101

(ii) Using 8-bit notation, perform the **twos** complement of 25_{10} -15_{10}, leaving your answer in binary. **(4 marks)**

THIS IS THE LAST PRINTED PAGE

KCSE 2024 REPLICA PREDICTION

(POSSIBLE TRIAL 6)

COMPUTER STUDIES

451/2

PAPER 2

TIME: 2½ HOURS

NAME……

SCHOOL…… **SIGN**……

INDEX NO…… **ADM NO**……

Kenya Certificate of Secondary Education.

INSTRUCTIONS TO CANDIDATES

- *Type your name and index number at the top hand corner of each printout.*
- ***Write your name and Adm no. number of the CD-RW***
- *Write the name and version of the software used for each question attempted in the answer sheet*
- *Passwords **should not be** used while saving the CDs*
- *Answer **all** questions*
- *All questions carry equal marks*
- *All answers must be saved in your CD*
- *Make printouts of the answers on the answer sheets provided*
- *Hand in all the **printouts** and the **CDs***
- *Arrange your printouts and staple them together*

FOR EXAMINERS USE ONLY

QUESTION	MAX. MARKS	CANDIDATE' S SCORE
1	50	
2	50	
TOTAL SCORE		

1.a) The following table was extracted from a form four class. Create a workbook named performance .Enter it as it is and save it as grades. Use it to answer the questions that follow.

(12mks)

	A	B	C	D	E	F	G	H
1	2012 Exam							
2	End of term Exam Analysis							
3		Name	Exam1	Exam 2	Exam 3	paper	Participation	
4	1	Jane	64	70	73	85	75	
5	2	Tony	70	77	88	95	90	
6	3	Jenney	77	83	79	88	80	
7	4	Richard	69	43	81	78	75	
8	5	Rachael	91	90	86	95	88	
9	6	David	44	26	54	78	80	
10	7	Roger	77	85	86	85	88	
11	8	Allen	83	86	92	85	88	
12	9	Victor	97	80	82	85	68	
13	10	Allan	69	69	50	85	75	
14	11	Brad	95	89	89	95	85	
15	12	James	91	84	92	85	80	
16	13	Arthur	87	79	84	85	80	
17	14	Robert	76	73	80	82	80	
18	15	June	82	84	74	88	85	
19	16	David	70	41	57	73	70	

(b) Add the following two students before victor and enter the following information: **(3mks)**

Name:	Thomas,	Washington.
Exam 1:	82	65
Exam 2:	75	79
Exam 3:	81	84
Paper:	87	92
Participation:	94	65

(c) Copy the data in the worksheet grade and paste it in worksheet 2 and save as Rank. **(2mks)**

(d) Calculate the final average for each student. The three exams should each count 25% of the final average, the paper should count for 15%, and participation should count for the remaining 10%. Using Absolute cell referencing. **(5mks)**

(e). Calculate the class average for each exam. **(3mks)**

(f) Apply one decimal point to the average point **(2mks)**

(g) Rank the students based on average points **(3mks)**

(h) Sort the students based on rank after average in ascending order **(2mks)**

(i) Create a column after rank and name it Grade. Using IF function, grade the students based on the following criteria. (A=90-100; B=80-89; C=70-79; D=60-69; F=below 60) **(6mks)**

(j) Below the average for each exam get the highest score and lowest score for exam1, exam2, and exam3 **(4mks)**

(k)Create a chart that shows the grade distribution for the final average and insert in a new worksheet. **(5mks)**

(l)Print the following GRADE, RANK and CHART **(3mks)**

Question 2

The following tables were extracted from king secondary school.

STUDENTS TABLE

AdmNo	StudentName	Class	Male	DOB
1021	AMOS WOKO	4E	Y	10/08/2005
1023	JUNE KENDI	4N	N	23/01/2002
1025	WINNIE OMOKE	4N	N	02/07/2003
1027	CHARLES OPIYO	4E	Y	10/04/2001

EXAMS

Term	AdmNo	Opener	MidTerm	EndTerm
T1/2021	1021	56	65	45
T2/2021	1021	78	76	67
T1/2021	1023	77	78	78
T2/2021	1023	45	67	70
T1/2021	1025	87	56	85
T2/2021	1025	67	74	69
T1/2021	1027	68	69	58
T2/2021	1027	83	89	56

LIBRARY TABLE

AdmNo	BookNo	BookTitle	DateIssued
1021	COMP 2/002	LOG ON COMPUTER BOOK 2	10/2/2020
1023	COMP 2/004	LOG ON COMPUTER BOOK 2	10/2/2020
1025	COMP 2/201	LOG ON COMPUTER BOOK 2	20/2/2020
1027	COMP 3/007	LOG ON COMPUTER BOOK 3	11/2/2020
1027	COMP 4/004	LOG ON COMPUTER BOOK 4	10/2/2020
1023	COMP 4/006	LOG ON COMPUTER BOOK 4	11/2/2020
1025	COMP 3/002	LOG ON COMPUTER BOOK 3	6/2/2020
1023	COMP 1/004	LOG ON COMPUTER BOOK 1	6/2/2022

i. Create a database file and name it as **KingsSchool** **(2 mks)**

ii. Design the tables listed above and set the most appropriate primary key and data types. **(9mks)**

iii. Create appropriate relationships among the table and enforce referential integrity **(3mks)**

iv. Create appropriate form to enter the records above. **(9mks)**

v. Design the query that shows list of students who have borrowed books in the Library. Save the query as borrowed books **(3mks)**

vi. Using a query, Calculate the total scores for each student. Save the query as totals. **(4mks)**

vii. Create a query called Age to display Adm No, Book No, Student name, D.O.B and Age of the student by the year 2021. **(5mks)**

viii. Design a query to extract the list of students whose name has letter A. Save the query as THE A **(4 mks)**

ix. Create a report to display student name, subject score, total scores per subject and the average score per subject grouped by classes' performance. Save the report as performance. **(6 mks)**

x. Create a report of all students and save it as students. **(2 mks)**

xi. Print the following; **(3 mks)**

a) Library table
b) Totals query
c) Performance report.

KCSE 2024 REPLICA PREDICTION

(POSSIBLE TRIAL 7)

COMPUTER STUDIES

451/1

PAPER 1

TIME: 2½ HOURS

NAME……

SCHOOL…… **SIGN**……

INDEX NO…… **ADM NO**……

Kenya Certificate of Secondary Education.

INSTRUCTION TO CANDIDATES

- *Write your name and index number in the spaces provided above*
- *This paper consists of **Two** sections **A** and **B***
- *Answer **ALL** questions in section **A***
- *Answer question16 and any other **THREE** questions from section **B***
- *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. State three functions of the control panel **(3marks)**

2. Use the passage below to answer the questions that follows

) **ral literature** is a broad term that includes: epics, folklore, proverbs, folksongs, oral poetry, jokes, myths, ritual chants, spells, legends, riddles, tongue-twisters, word games, recitations and word games. *Broadly it refers to any form of verbal art that is transmitted through word of* mouth.

Jane Nandwa and Austin Bukenya (1993) describe oral literature as:

"Those utterances whether spoken, recited or sung whose composition and ~~performance exhibit to an appreciable~~ degree the artistic character of accurate observation, vivid imagination and ingenious expression."

When used in a piece of writing, oral literature in its various genres creates the effect of livening up the story and giving it an identity besides other functions such as capturing the audience's attention and stressing important points. These effects of orature are portrayed vividly in Okot P' Bitek's novel "**White Teeth**."

(a) Mention three paragraph formatting features used in the passage above **(3marks)**

(b) With an aid of examples describe three text formatting features applied in the above passage **(3marks)**

3. As regards to communication within computer network, what do you understand by the following terms **(2marks)**

(i) Point –to-Point

(ii) Broadcast

4. Describe three components of video conferencing **(3marks)**

5. With reference to Desktop publishing describe the following terms **(2marks)**

(i) Gutter

(ii) Stroke

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

7. State the difference between private university and public university **(2marks)**

8. Ronaldo a student from Lenana School lives in a house with full internet access. She spends most of her time on phone and Desktop computer. State any three social issues associated with doing this **(3mks)**

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

10. Give two reasons to justify why many computer users today prefer saving their documents in the google drive **(2marks)**

11. Computerization and automation are the great innovations of the 21st century. Describe how introduction of computers in the work place affected the job market **(3marks)**

12. Mention three characteristics of human beings that can be used to enable computerized law enforcement systems **(3marks)**

13. Use illustrations to explain two ways of implementing FOR loop **(2mks)**

14. Explain the function of the following as used in data security and control **(2marks)**

(i) Patches

(ii) Firewall

15. The office has a fast internet connection for transferring information. However sometimes the internet run slowly. Give two reasons why this could be the case. **(2mks)**

SECTION B (60 MARKS)

Answer Question 16 (Compulsory) and Any other THREE in this Section

16.

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

(i) Definiteness

(ii) Finiteness

(b) State three differences between Assembly language and Machine language **(3mark)**

(c) Study the Pseudo code below and use it to answer the question that follows

```
Start
  Input Initial Deposit
  Input Interest Rate
  Set Deposit to Initial Deposit
  Set Year to Zero
  While Year <=4 Do
  Interest =Deposit * Interest rate
  Total = Deposit +Interest
  Deposit =Total
  Year=Year+1
  Endwhile
        Display Total
  Stop
```

(i) Given that the Initial Deposit is 2000 and the Interest rate is 10% get the final total **(4marks)**

(ii) Draw a flowchart for the above algorithm using a Repeat.... Until **(6marks)**

17.

(a) Study the table below and answer the questions that follow

	A	B	C	D	E	F	G
1	**Student Name**	**Math**	**English**	**Computer**	**Total**	**Average**	**Grade**
2	James Pesa	24	22	52			
3	Maureen Kamau	60	17	71			
4	James Jared	24	41	10			
5	Mary Anna	52	63	81			
6							

(i) Write down the formula that

(a) Calculate the total marks for Maureen Kamau **(2marks)**

(b) Calculate the total marks for students with more than 50 and above in Maths **(2marks)**

(c) Get the mean score for Computer **(2mark)**

(ii) The grading system is a shown in the table below .Write a function that will assign grades as reflected in the table below **(3marks)**

Average	Grade
80 - 90	A
70 - 80	B
60 -70	C
50 - 60	D
0 - 49	E

(iii) Write a formula using named reference that counts the total number of students who have scored more than 50 in computer **(2marks)**

(b) Describe three features that make spreadsheet application suitable for mathematical applications **(3marks)**

(c) A formula = B$2+$C2 was typed in cell C2 the copied to cell C3 and the finally to D3. State how the formula will appear in D3 **(1mark)**

18.

(a) What is the binary equivalent of $24\frac{12}{32}$ base 10 **(3marks)**

(b) Convert 5BA2H to Binary **(3marks)**

(c) Using 8-bits twos complement subtract 19_{10} from 14_{10} **(3marks)**

(d) Given that the left most digit is a sign bit work out the decimal equivalent of the following binary numbers

(i) 00111010110_2 **(2marks)**

(ii) 10100111010_2 **(2marks)**

(e) Describe two coding schemes used by computers to represent data in a computer **(2marks)**

19.

(i) Study the tables shown below and use them to answer the questions that follow

Table 1

Admission No	Name	Guardian ID	Date of Birth	Class	Hall	County
0978	Peter Kilulu	P0023	12-12-1999	Form Three	Moi	Kiambu
4678	John James	P0045	07-08-1999	Form Two	Kenyatta	Muranga
6754	Luke Kenya	P0023	06-01-2000	Form One	Uhuru	Migori

Table 2

Guardian ID	Name	Address	Telephone	County
P0023	John Mayi	P.O Box 123 Kisumu	0723567453	Kisumu
P0045	Jerry Watu	P.O. Box 2341 Nairobi	0745897654	Nairobi

(a) Choose the most appropriate key field for Table 1 and 2 **(2marks)**

(b) Identify the most suitable data types Admission No and Date of Birth **(2marks)**

(c) Describe how a relationship can established between Table 1 and 2 **(3marks)**

(d) Write an expression to validate Date of Birth to allow dates that following in the year 1999 only **(2marks)**

(ii) Peter Kipasi is the system analyst for Finaly group of companies. The Company Management automated their operations to have a competitive advantage over other companied in the same

field. Peter received a memo from the CEO requesting him to consider changing the current information system. State what might have necessitated this **(3mark)**

(iii) State three qualities of a good system analyst **(3marks)**

20.

(i) Mention four limitations of computer networking **(4marks)**

(ii) Explain how fibre optic transmit data signal and yet the core can only allow light signals to pass through **(3marks)**

(iii) State the function of the following Communication devices

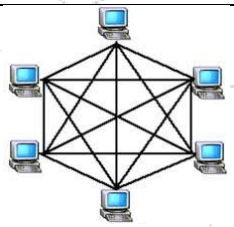
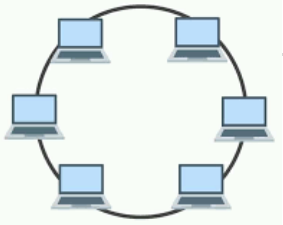
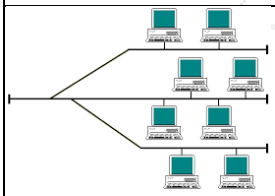
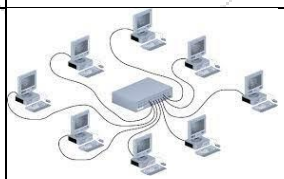
(a) Router **(1mark)**

(b) Switch **(1mark)**

(c) Bridge **(1mark)**

(d) NIC **(1mark)**

(iv) Identity the Network topologies represented in the table **(4marks)**

Name:	**Name:**
	
Name:	**Name:**
	

KCSE 2024 REPLICA PREDICTION

(POSSIBLE TRIAL 7)

COMPUTER STUDIES

451/2

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 print out*

b) *Write your **Name**, and **Index Number** on the CD / Removable storage medium provided*

c) *Write the **name** and the **version** of each S/W 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) *All answers **must** be saved in the CD / Removable storage medium*

h) *Make a printout of answers on the answer sheet provided.*

i) *Arrange your printouts and tie/staple them together.*

j) *hand in all the **printout** and the CD/removable storage medium used*

1. **Jumia** sales and marketing company sells products J, K, L. The table below shows an extract of a spreadsheet for the company`s salespersons and their respective sales in shillings for each product.

	A	B	C	D	E	F	G	H
1	**SALES PERSON**	**PRODUCT J**	**PRODUCT K**	**PRODUCT L**	**TOTAL SALES**	**POINTS**	**CATEGORY**	**TOTAL PAY**
2	Thomas	4,000.00	6,230.00	7,500.00				
3	Mary	4,500.00	6700.00	8,000.00				
4	Cantona	5,678.00	10,000.00	7,800.00				
5	Janeth	3,200.00	4,000.00	9,600.00				
6	Maxwell	8,000.00	7,005.00	8,900.00				
7	Nambwa	9,800.00	9,670.00	10,000.00				
8	Kedeki	2,700.00	3,400.00	2,300.00				
9	**TOTAL**							

(a) i) Using a spreadsheet package enter the above information and save it as **SALES_TABLE.** **(13 marks)**

(b) (i) Type a formula:

I at cell B9 to compute the total sales for product J; **(1 mark)**

II at cell E2 to compute the total sales for Thomas . **(1 mark)**

(ii) Apply the formulae to the appropriate cells. **(2 mark)**

(c) A Salesperson earns points for the sales of each product based on the following criteria;

- 1 point for every shs. 50 for product J,
- 2 points for every shs.65 for product K
- 3 points for every shs.40 for product L

(i) Type a formula in cell F2 to compute the total points earned by Thomas; **(3marks)**

(ii) Apply the formula in (c) (i) to the rest of the salespersons. **(1 mark)**

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

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

Those salespersons attaining a Gold category earn a promotion.

(i) Type a formula in G4 to determine Cantona's category. **(4 marks)**

(ii) Apply the formula in (d) (i) to other appropriate cells. **(2 marks)**

(iii) Type a formula at G10 to determine the number of Sales who will earn a promotion **(4 marks)**

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

(f) Create a bar chart showing product J and L sales person. Insert appropriate labels on the chart. **(9 marks)**

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

(h) Print the following: **(3 marks)**

(i) SalesData;

(ii) SalesData showing the formulae;

(iii) SalesChart.

Question 2

Witu Company is an organization that has employed several workers .In order for it to monitor the performance of its workers and the different duties assigned to its workers, the company needs a database to organize the information required.

(a) Create a database file and name it records 2016 **(2mks)**

(b) (i)Using the table below create the appropriate fields and split the data into two tables ,one for storing employees records and the other for storing employment records and give them appropriate names **(8mks)**

EMPLOYEE NO.	NAME	DEPARTMENT	MARITAL STATUS	SALARY	AGE	DEP CODE
2213	JOHN CLAY	TRANSPORT	MARRIED	8,000.00	35	D001
2214	ROSE JOHNS	CUSTOMER CARE	MARRIED	10,000.00	40	D002
2215	PETER ROGERS	HEALTH	MARRIED	50,000.00	45	D003
2216	JED OTIENO	FINANCE	SINGLE	20,000.00	25	D004
2217	VINCENT JED	TRANSPORT	SINGLE	8,000.00	20	D001
2218	ALLAN LIMO	HEALTH	SINGLE	4,000.00	22	D003
2219	PETER OLOO	HEALTH	MARRIED	80,000.00	35	D003
2220	HUSSEIN KIMAN	FINANCE	SINGLE	15,000.00	26	D004
2221	ROBERT KIBANI	FINANCE	SINGLE	5,000.00	28	D004
2222	JANE LESSOS	TRANSPORT	MARRIED	6,000.00	31	D001
2223	LUCY OJWANG	CUSTOMER CARE	MARRIED	8,000.00	30	D002

(ii) Create screens for each table for inputting the data in the table above **(12mk)**

(iii) For each of the tables, choose the most appropriate primary key **(2mks)**

(iv) Create a relationship between the two tables **(2mks)**

(c.) Create a query to display the files Name, Department and Salary for those employees who earn more than 10,000.00.Save as experts **(5mks)**

(d)

(i) Generate a tabular report with landscape orientation from the table to display the fields in the following order **(5mks)**

EMPLOYEE NO., NAME, SALARY, DEPARTMENT, AGE

(ii) Sort records in the report in alphabetical of the name field **(2mks)**

(ii) Compute the total of salary for all the employees and place it below the salary column. Save as **Expenses** **(5mks)**

(iv) Create a query to display Name, Marital Status, Age and the workers years of birth and save it as YOB **(5mks)**

(e)Print the two **tables, experts, expenses** and **YOB** **(2mks)**

KCSE 23

KCSE 2024 REPLICA PREDICTION

(POSSIBLE TRIAL 8)

COMPUTER STUDIES

451/1

PAPER 1

TIME: 2½ HOURS

NAME……

SCHOOL…… **SIGN**……

INDEX NO…… **ADM NO**……

Kenya Certificate of Secondary Education.

INSTRUCTIONS TO CANDIDATES

- ***i)*** *Write your name and admission number in the spaces provided above.*
- ***ii)*** *This Paper consists of two sections **A** and **B**.*
- ***iii)*** *Answer **ALL** the questions in section **A**.*
- ***iv)*** *Answer **question 16 (compulsory)** and any other **THREE** questions from section **B**.*
- ***v)*** ***All** answers should be written in the spaces provided.*

FOR EXAMINER'S USE ONLY

Section	Questions	Candidate's score
A	2- 15	
B	16	
	17	
	18	
	19	
	20	
	TOTAL SCORE	

1. Identify the devices shown below **(2Mks)**






i. **ii.** **iii.** **iv.**

2. With the increase use of computers and widening technological gap, problems associated with its use also increase. List **four** problems associated to this in African countries. **(4mks)**

3. Explain the following terms associated with VDU. **(3mks)**

a) Resolution

b) Dot pitch

C) Display size

4. Explain **three** ways in which a computer system can be used in electing a school captain. **(3mks)**

5. Bamburi cement employed check roll clerks, record clerks, copy 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)**

6. Highlight the functions of each button on the navigation toolbar of a web browser. **(4mks)**

a. Back button

b. Refresh button

c. Home button

d. Favorites button.

7. Give **three** general rules that must be observed to keep within the law when working with data and information. **(3mks)**

8. State **two** properties that an operating system displays about a file. **(2mks)**

9. Keyboard keys can be classified into different categories one of them is alphanumeric keys. Outline three of its features **(3mks)**

10. Define the following terms as used in data processing. **(2mks)**

a. Data logging

b. Interactive processing

11. Explain the functions of the following network devices **repeater** and **router**. **(2mks)**

12. Environmental protection agency (EPA) is very useful body in energy consumption and radiation. Briefly explain its role **(1mk)**

b. Explain how information and communication technology has contributed adversely to environmental pollution. **(2mks)**

13.a) Give two reasons why primary key is important in database **(2mks)**

(b) Like "K*" interpret this syntax in criteria query generation and give an Example **(2mks)**

14. Describe **two** situations in the bus transport industry where computerized systems could replace human employees. **(2mks)**

15. State **two** ways of warm booting a computer. **(2mks)**

SECTION B: (60 MARKS)

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

16.(a) Study the Pseudo code **below** and answer the questions that follows.

```
BEGIN
Print "enter the value of A and B";
Read A, B
Y=A+B
While Y< 20 Do
BEGIN
PRINT Y
A=B
B=Y
Y=B+A
ENDWHILE
PRINT A, B, Y;
END
```

i. Assuming the user keys in 2 and 4 when prompted to enter the values for A and B respectively, determine the values of A, B and Y show your working. **(4 marks)**

ii. State the control structures used in the above pseudocode. **(2 mk)**

iii. Draw a flowchart that would be used in place of the pseudocode. **(6mks)**

(b) Give three examples of Iteration construct. **(3marks)**

17. (a) Due to the rapid use of technology there are so many emerging issues e.g. cloud computing.

i. What is cloud computing? **(2mk)**

ii. State three benefits of cloud computing **(3mks)**

iii. List three examples of cloud computing **(3mks)**

(b) i. What is multimedia? **(1mks)**

ii. State two components of multimedia systems. **(2mks)**

(c) Describe the following data types as used in database. **(4mks)**

i) Number

ii) Memo

iii)Ole object

iv) Currency

18. a.(i) List down three advantages of ATM cards. **(3mks)**

(ii) State four components of an electronics point of sale. **(2mks)**

d. Give three reasons why a manager may prefer to teleconference during meetings. **(3mks)**

c. Digestive Biscuit Company would like to introduce use of a new information system. State three reasons why the company would like to introduce a new information system**?** **(3mks)**

d. Give two responsibilities that are carried out by:

i.Database Administrator **(2mks)**

ii. Software Engineer **(2mks)**

19. a) Distinguish between physical and logical topology as used in networking **2mks)**

b) Using a illustration explains Multipoint transmission. **(3mks)**

c) i) What is interrupt **(1mks)**

ii) Explain three causes of interrupt **(3mks)**

d) Describe the following menu tools as used in Ms. Word **(6mks)**

i) Print layout:

ii) Web layout:

iii) Page layout

20.a) Twos complements is the most popular way of representing negative numbers in computers system. List **two** advantages of using this method. **(2mks)**

b) List three common ways of representing a signed binary number in computer technology **(3mks)**

c) Convert the following binary numbers to their octal equivalents;

i) 111010.0111_2 **(2mks)**

ii) 110111011.11_2 **(2mks)**

d) What is the hexadecimal equivalent of 747_8? **(3mks).**

e) Using two's complement, work out $+21_{10} + (-7_{10})$, giving your answer in decimal notation **(3mks)**

KCSE 2024 REPLICA PREDICTION

(POSSIBLE TRIAL 8)

COMPUTER STUDIES

451/2

PAPER 2

TIME: 2½ HOURS

NAME……

SCHOOL…… **SIGN**……

INDEX NO…… **ADM NO**……

Kenya Certificate of Secondary Education.

INSTRUCTIONS TO CANDIDATES.

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

- *Sign and write the date of the examination below the name and index number on each printout.*
- *Write your name and index number on the compact disks*
- *Write the name and version of the software used for each question attempted in the answersheet.*
- *Passwords **should not** be used while saving in the compact disks*
- *Answer all the **questions***
- *All questions carry equal marks.*
- *All answers **must** be saved in your compact disks*
- *Make a printout of the answers on the answers sheets provided.*
- *Hand in **all** the printouts and the compact disks*

1. The table below shows the standing of the teams in the SUPAMO Premier League after the first week's fixtures. Copy the data exactly as it appears into a worksheet as save the work as SPAMO. **[10mks]**

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	**SUPAMO Premier League**												
2													
3	Pos	Team	P	W	D	L	GF	GA	GD	Pts		Points	
4		Sunshine Sec		0	1	0	0	0				Won =	3
5		Pangani High		1	0	0	2	0				Drawn =	2
6		Moi Girls Nairobi		1	0	0	5	0				Lost =	0
7		Alliance High		0	0	1	3	4					
8		Nakuru High		0	1	0	2	2					
9		Kisumu Girls		1	0	0	4	3					
10		Mombasa High		0	0	1	0	5					
11		MakueniGirls		0	0	1	0	2					
12		Kakamega High		0	1	0	2	2					
13		Turkana Girls		0	1	0	0	0					
14													
15		Highest											
16		Lowest											
17		Average											

i. Calculate the following for each team.

a) Games Played (P), based on those Won, Drawn and Lost (W, D and L). **[3mks]**

b) Goal Difference (GD), based on Goals Foul and Goals Against (GF and GA). **[3mks]**

c) Points (Pts) based on the data in the "Points" table. **[6mks]**

ii. For each of the stats (P, W, D, L, GF, GA, GD and Pts), Calculate the highest values, the lowest values and the average values, (average shown to one decimal place). **[7mks]**

iii. Create a column chart on a separate worksheet that shows the Goal Difference of teams**. [8mks]**

iv. Sort the teams by their Points, (Goal Difference is used for team's level on points). Fill in the Position (Pos) of the teams. Save as SUPAMO week1.xls **[4mks]**

v. The following are the results of the second week's fixtures **[6mks]**

Moi Girls Nairobi	6 – 1	Makueni Girls
Pangani High	3 – 2	Alliance High
Turkana Girls	1 – 0	Kakamega High
Nakuru High	1 – 1	Sunshine Sec

Make the necessary changes to the table for week 1 and save the work as SUPAMO week2.xls

vi. Print SPAMO, SUPAMO week1, and SUPAMO week2 **(3mks).**

2. The **figure on page 4** shows the design of an Admission form. The form is supposed to be filled in duplicate. Use a desktop publishing package to design the admission forms as follows;

(a) Create a new publication named **Admission form** with the following page layout.

(i) Paper size: A4,

(ii) Orientation : landscape,

(iii) Margins: 2.92 cm or 0.5 inches all round. **(4 marks)**

(b) Enter the text and objects and format them as they appear in the **Figure.** The space between the two application forms measures 0.2 inches or 0.50cm. **(45 marks)**

(c) Save and print the publication **(1mark)**

SUPAMO HIGH SCHOOL



P.O.BOX 4768
NAIROBI
CELL: 0000666677
FAX:2465
Email:supamo@yahoo.com
Website: www.supamo.com



Section 1: CHILD'S PERSONAL DETAILS

Family Name		Father's Name			
Date of Birth					
Nationality		Male		Female	
Address			Residence		
Parent's Telephone Numbers			Mobile		
			Office		

Name and classes of any brother (s) /sister (s) already attending the school

_____

_____

Language (s) commonly spoken at home: (1)_____

(2)_____

Section 2: ACADEMIC DETAILS

Class in which admission is sought:_____

SUPAMO HIGH SCHOOL



P.O.BOX 4768
NAIROBI
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Website: www.supamo.com



Section 1: CHILD'S PERSONAL DETAILS

Family Name		Father's Name			
Date of Birth					
Nationality		Male		Female	
Address			Residence		
Parent's Telephone Numbers			Mobile		
			Office		

Name and classes of any brother (s) /sister (s) already attending the school

_____

_____

Language (s) commonly spoken at home: (1)_____

(2)_____

Section 2: ACADEMIC DETAILS

Class in which admission is sought:_____

KCSE Predictions Marking Schemes - 0746 222 000 / 0742 999 000

KCSE 2024 REPLICA PREDICTION

(POSSIBLE TRIAL 9)

COMPUTER STUDIES

451/1

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 at the top of this page.
[b]. Sign and write the date of examination in the spaces provided above
*[c]. This paper consists of **TWO** sections**; A and B***
*[d]. Answer **ALL** questions in section A*
*[e]. Answer question **16** and any other THREE questions from section B*
[f]. All answers should be written in the spaces provided on the question paper.

For Official Use only

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

SECTION A [40 MARKS]

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

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

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

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

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

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

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

(i). Output device;

(ii). Software.

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

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

(a). Headache

(b). Back and Neck Pain

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

(i). tab stops; **(2 marks)**

(ii). Section breaks. **(2 marks)**

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

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

(a). Software errors **(1 mark)**

(b). Computer fraud **(1 mark)**

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

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

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

(a). backspace;

(b). insert (ins)

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

SECTION B [60 MARKS

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

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

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

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

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

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

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

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

(c). Convert

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

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

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

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

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

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

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

(i). Confidentiality

(ii). Industrial espionage

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

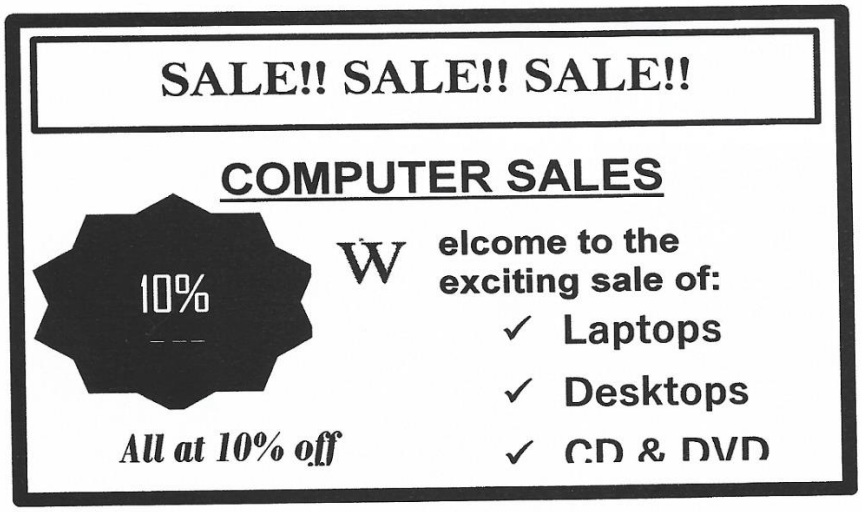
(c). If one table in a database contains the field: EMPLOYEE **- ID, LAST – NAME, FIRST – NAME** and **HIRE – DATE** and another contains the fields **DEPARTMENT, EMPLOYEE – ID** and **SALARY**, it is possible to establish a relationship between the two tables. **(6 marks)**

(i). Name the type of such a database

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

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

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



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

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

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

(i). Network Interface Card **(1mark)**

(ii). Modem **(1mark).**

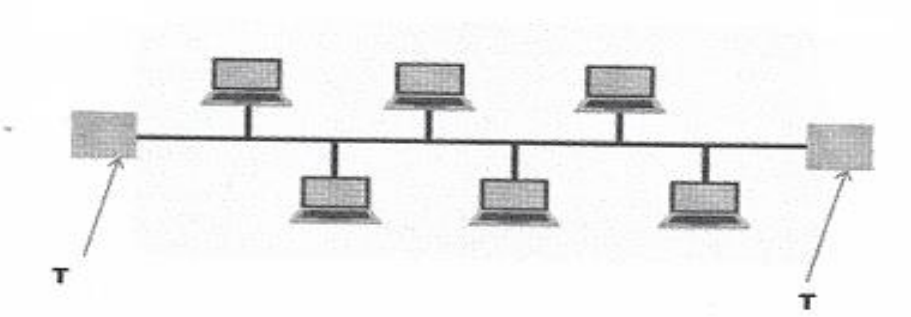
(iii). Repeater **(1mark)**

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

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

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

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



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

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

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

KCSE 2024 REPLICA PREDICTION

(POSSIBLE TRIAL 9)

COMPUTER STUDIES

451/2

PAPER 2

TIME: 2½ HOURS

NAME……

SCHOOL…… **SIGN**……

INDEX NO…… **ADM NO**……

Kenya Certificate of Secondary Education.

INSTRUCTIONS TO THE CANDIDATES

1. *Indicate your name and index number at the top right hand corner of the printout.*
2. *Write your name and index number on the CD/removable storage medium provided.*
3. *Write the name and version of the software used for each question attempted.*
4. *This paper consists of two questions each having **50** marks.*
5. *Answer **all** the questions **Passwords should not be** used while saving files.*
6. *All files created must be saved in the provided CD/removable storage medium.*
7. *Make printouts of your answers on the answer sheet provided.*
8. *Hand in all the printouts and the Cd/Removable storage medium used.*
9. *Candidates should answer the questions in English.*

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

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

(i) Paper size A4

(ii) Orientation: Landscape.

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

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

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

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

(d) Print the **publication** **(2 marks)**

KCSE 23

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 predecesso



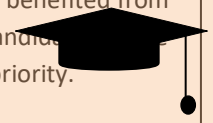
PROGRAMME ELIGIBILITY

- 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.
- Attrac

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, candid year preceding the selection are given priority.



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

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

Figure 1

(a) (i) Using a spreadsheet package, enter the above information and save it as **SALES_TABLE.** (9 marks)

(ii) Format the worksheet to appear as it is. **(4 marks)**

(b) (i) Type a formula:

(I) at cell B9 to compute the total sales for product P; **(1 mark)**

(II) at cell E2 to compute the total sales for Thomas **(1 mark)**

(ii) Apply the formulae to the appropriate cells. **(2 marks)**

(c) A salesperson earns points for the sales of each product based on the following criteria;

- 1 point for every shs 50 for product P,
- 2 points for every shs 65 for product Q,
- 3 points for every shs 40 for product R.

i) Type a formula in cell F2 to compute total points earned by Thomas; **(3 marks)**

ii) Apply the formula in c(i) to the rest of the salespersons. **(1 mark)**

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

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

Those salespersons attaining a Gold category earn a promotion.

(i) Type a formula in G4 to determine Gabriel's category. **(5 marks)**

(ii) Apply the formula in d(i) to other appropriate cells. **(1 mark)**

(iii) Type a formula at G10 to determine the number of salespersons who will earn a promotion. **(4 marks)**

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

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

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

(h) Print the following: **(3 marks)**

i)**salesData**

ii)**SalesData** showing the formulae;

iii)SalesChart.

KCSE 2024 REPLICA PREDICTION

(POSSIBLE TRIAL 10)

COMPUTER STUDIES

451/1

PAPER 1

TIME: 2½ HOURS

NAME……

SCHOOL…… **SIGN**……

INDEX NO…… **ADM NO**……

Kenya Certificate of Secondary Education.

INSTRUCTIONS TO CANDIDATES

1. *Write your name and Admission number in the spaces provided above*
2. *Answer all questions in section A*
3. *In section B,* ***answer question 16(compulsory)*** *and* ***any other three*** *questions*
4. ***Candidates should answer the questions in English.***

FOR EXAMINER'S USE ONLY

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

SECTION A (40 Marks)

Answer all questions in this section

1. **Name** the storage device that was introduced in each of the following computer generations

a) Second Generation **(1 mark)**

b) Third Generation **(1 mark)**

c) Fourth generation **(1 mark)**

d) Fifth generation **(1 mark)**

2. Mr. Tom, a games teacher at Tatu secondary school wants to invite several schools for basketball tournament. He was advised to use mail merging technique to create invitation letters for the respective schools to be invited. **State two** advantages of using this technique to create the letters. **(2 marks)**

3. Susan came across the following examples of software while revising for her computer studies exam: *Linux, Quickbooks, Lotus wordpro, Windows 7,*

Classify each as either system software or application software. **(2 marks)**

4. Figure 1 below shows symbols of ports in a computer system. **Identify** the peripheral device that is connected to each of them.

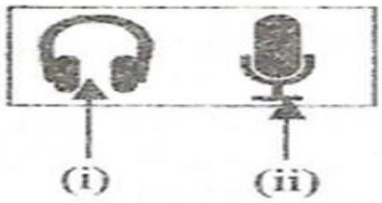


Figure 1

5. **Distinguish** between *main memory* and *secondary memory* as used in computers **(2 marks)**

A Five star hotel has decided to pay its suppliers using electronic payment method. **State two** benefits the hotel will benefit from making this decision. **(2 marks)**

6. Annet would like to develop system documentation that will assist users when learning how to use her system. **State four** contents that such documentation should have. **(4 marks)**

7. **State** a circumstance under which the following features could be applied to a publication

a) Text wrapping **(1 mark)**

b) Object grouping **(1 mark)**

8. Kennedy would like to edit a document prepared using word processing program. **Name four** editing keyboard keys that he could use to achieve his objective. **(2 marks)**

9. a) **State two** ways an inserted formula can be applied to other cells in a spreadsheet **(2 marks)**

b) Suzzie, a secretary at Achievers secondary school carries out her daily duties using computers and suffers wrist strain. **State two** ways she would use to reduce wrist strain. **(2 marks)**

10. Sarah noticed that after copying a video file in her flash disk from a cyber café in town, the video file self-replicated in the flash disk filling all the available memory space.

a) State one possible cause for such occurrence **(1 mark)**

b) State two ways that can be used to prevent the occurrence of such incidences **(2 marks)**

11. Kirundi Secondary school would like to introduce the use of internet in the school's computer lab. **Explain three** security issues that the students are likely to be exposed to. **(2 marks)**

12. a) **State two** characteristics of a primary key field in a database system **(2 marks)**

b) **State one** advantage of the *auto save* feature in a word processing program **(1 mark)**

State two advantages of using random file organization method in storage devices**. (2 marks)**

a) Wireless Fidelity (WiFi) has become one of the most popular modes of internet connection in recent days. **State two** reasons for this trend. **(2 marks)**

b) Explain a reason why *bcc* option could be used when sending an email **(2 marks)**

SECTION B (60 Marks)

Answer question 16 (Compulsory) and any other three questions

13. a) Andrew would like to develop a system using a programming language. **State three** factors he should consider when selecting the appropriate language **(3 marks)**

b) State the **meaning** of the following terms as used in programming:

i) Interpreter **(1 mark)**

ii) Editor window **(1 mark)**

c) Dennis designed the pseudo code below for a program that would be used for calculating the sum and average of all even numbers between 50 and 100 and display the results.

```
START
    Set sum to 0
    FOR num = 0 to 100 DO
        num = num + 1
        Sum = num + sum
        Average = sum/count
    END
    PRINT Sum, Average
STOP
```

i) After carrying out a dry run of the pseudocode, Dennis found out errors in it. **Identify three** logical errors that he might have found. **(3 marks)**

ii) Draw a flowchart for a corrected version of the pseudo code in part (i) above **(7 marks)**

14. `a) The table below shows items extracted from David's retail shop spreadsheet. Use it to answer questions (i) to (ii)

	A	B	C	D
1	**Item**	**Unit Price**	**Quantity**	**Total Cost**
2	Bread	60	10	
3	Milk	50	15	
4	Matchbox	20	10	
5	Toothpaste	120	10	
6			**TOTAL AMOUNT**	

i) Using cell references only, write a function that would be used to calculate the total cost of milk **(2 marks)**

ii) Using a cell references only, write a formula that would be used to calculate the total amount spent on all items. **(2 marks)**

b) **Distinguish** between *hacking* and *cracking* as used in computer security **(2 marks)**

c) State the **function** of each of the following parts of a spreadsheet window

i) Formula bar **(1 mark)**

ii) Name box **(1 mark)**

d) State the circumstance under which OLE object data type is suitable when designing a table in a database **(1 mark)**

e) **Explain** the function of a flowchart in system design **(2 marks)**

f) Distinguish between *multi user operating system* and *multi-tasking operating system* **(2 mks)**

g) When purchasing a printer, Atieno was advised to consider its *compatibility* and that it should be *plug and play*. **State** the meaning of these two terms:

i) Compatibility **(1 mark)**

ii) Plug and play **(1 mark)**

15. a) **Explain one** challenge likely to be experienced in a closed system **(1 mark)**

b) Every organization requires an information system

i) Define an information system **(1 mark)**

ii) Explain two reasons an organization may change an existing information system **(4 marks)**

c) Testing systems after construction is a very critical process in systems development. **State three** areas an effective testing should cover. **(3 marks)**

d) Using suitable examples, **distinguish** between layout based DTP software and graphical based DTP software. **(3 marks)**

e) The use of ICT has affected every aspect of human life. **State three** ways ICT in which ICT can be used to enhance physical fitness of the members of the society. **(3 marks)**

16. a) **Distinguish** between *freeware* and *open source* software **(2 marks)**

b) **Describe** how operating systems handle the following in a computer system

i) Errors **(1 mark)**

ii) Interrupts **(1 mark)**

c) State the purpose of the following in a computer

i) Cache Memory **(1 mark)**

ii) System clock **(1 mark)**

iii) Motherboard **(1 mark)**

d) Mark, an employee of an institution used his computer to access his boss's computer to get some confidential information and gave it to one of its clients at a fee.

i) State the type of crime committed by Mark **(1 mark)**

ii) State two ways of protecting data against the crime committed by Mark **(2 marks)**

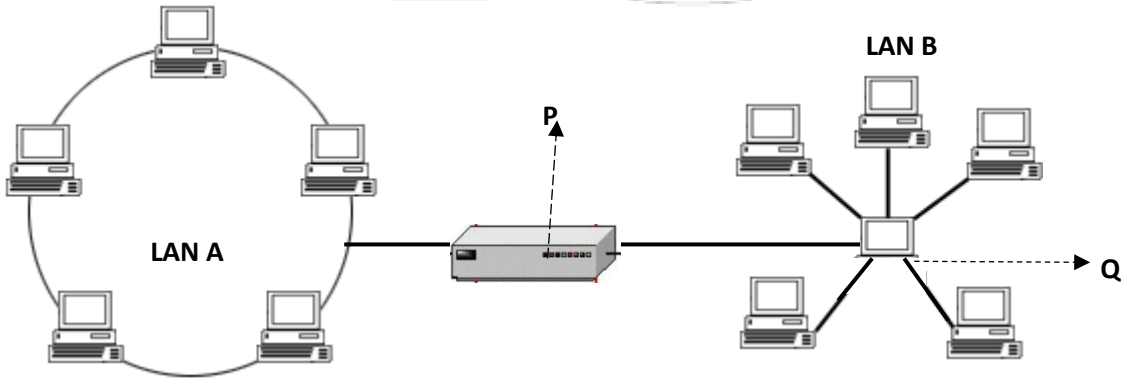
e) Using two's complements, **perform** the calculation 41_{10} - 15_{10} leaving your answer in decimal notation **(5 marks)**

17. a) **Identify four** data collection methods that may be used in data processing cycle **(2 marks)**

b) **State three** benefits of using time sharing data processing mode in a leaning institution **(3 mks)**

c) Differentiate between *webmaster* and *web designer* **(2 marks)**

d) The network set up below is formed by combining two LANs. Use it to answer the questions (i) – (v) belo



i) Identify the network devices labelled:

P ……. **(1 mark)**

Q…….. **(1 mark)**

ii) State the importance of device P in the network **(1 mark)**

iii) What is the name given to the combined topology in the figure above **(1 mark)**

iv) Identify the network topology A and B

P ……. (1 mark)

Q…….. (1 mark)

v) State two problems a network administrator may encounter in management of LAN A **(2 marks)**

KCSE 23

KCSE 2024 REPLICA PREDICTION

(POSSIBLE TRIAL 10)

COMPUTER STUDIES

451/2

PAPER 2

TIME: 2½ HOURS

NAME……

SCHOOL…… **SIGN**……

INDEX NO…… **ADM NO**……

Kenya Certificate of Secondary Education.

INSTRUCTIONS TO CANDIDATES

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

b) *Write your name and index number on the CD/Removable provided.*

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

d) *Answer all the questions*

e) *All questions carry equal marks.*

f) *Passwords **should not be used** while saving in the CD/Removable provided.*

g) *All answers must be saved in your CD/Removable provided.*

h) *Make a printout of the answers on the answer sheet.*

i) *Arrange your printouts and staple them together.*

j) *Hand in all the printouts and the CD/Removable used.*

k) ***Candidates should answer the questions in English.***

1. a)Type the following passage as it appears using Times new roman and save it as CFSK

(35 marks)

Computer for Schools Kenya

Computers for Schools Kenya (CFSK), is a non-profit organization established in October 2002 with the vision of establishing an information-rich Kenyan society actively contributing to sustainable national development.

CFSK believes in the power of education and that it is possible to teach, train, feed and ensure sustainable development for the nation through application of technology and the innovations it ensures.

The CFSK program thus creates a forum for community development that is led by community members and sustained by a multiplier effect

In the nine years of existence, CFSK has sourced over 45,000 personal computers that have been deployed in nearly 2,000 learning institutions.

The annual awards for leadership in ICT in Africa were handed out in November 2007 and 2008 at a televised gala in Johannesburg, South Africa

During this period of time, we have also carried out training for over 12,000 heads of schools and Education Officers, teachers/tutors, and members of Schools' Boards of Governors and Parents/Teachers Associations.

Website

http://www.cfsk.org

Year established

2002

Automation basic activities in education, like grading.

In lower grades, teachers often find that grading takes up a significant amount of time, time that could be used to interact with students, prepare for class, or work on professional development.AI can be used to automate grading systems and present the output in tables .

GRADE THREE COMMON EXAMINATION				
SURNAME	**LANGUAGE SKILLS**	**COMPUTING SKILLS**	**ENVIRONMENTAL SKILLS**	***Total Score***
Macmillan	87	50	78	
Trevor	92	95	76	
Johnstone	73	85	90	
Kathleen	67	56	75	
Count				
Highest Scores				

b) Copy CFSK to a new document and save as **CFSK1** **(2marks)**

c) Apply 1.5 line spacing to the entire document **(3marks)**

d) Page number the document as follows

i) Page number position: Bottom centre **(2 marks)**

ii) Number format: Capital roman numbers **(2 marks)**

f) Save the changes made in CFSK1 **(2 marks)**

g) Print the documents CSFK, and CSFK1 **(1 mark)**

2. Excel school ordered computer accessories and the following suppliers provided the following As illustrated below.

	A	B	C	D
1	**Name**	**Item Sold**	**Amount**	**Date**
2	Joseph	Mouse	200.00	2/11/2011
3	Peter	System unit	5,000.00	3/11/2011
4	Tony	Keyboard	200.00	4/11/2011
5	Mike	CD Writer	2,000.00	5/11/2011
6	Joseph	Computer1 System	2,000.00	6/11/2011
7	Peter	Mouse	200.00	7/11/2011
8	Tony	Mouse	200.00	8/11/2011
9	Mike	System Unit	2,500.00	9/11/2011
10	Joseph	Keyboard	200.00	10/11/2011

(a)Restrict all the cells in the Amount column to allow entry of amounts Between 0 and 6000. A message, "Input amount <= 6000" should be displayed whenever a cell is selected. In case of an invalid entry, the message, "Amount >6000", should be Displayed. Put an inside and outside border on data on sheet 1. **(5mks**

(b) Save it (the workbook) as **Excel**. **(11mks)**

(c) Copy the content of Sheet 1 to Sheet 2 into the exact position and rename it as **New price**.

Insert a new row after the Amount row and label it "New price". The suppliers of the items decided to, increase all their items by 20%. Enter the percentage into cell A18.
Using absolute referencing, calculate the new price of each of the items in the "New price" column. **(7mks)**

(d) Copy the content of Sheet 1 to Sheet 3 and rename it as Subtotals. Using subtotals sheet Find subtotals for each supplier and display the Grand Total. **(6mks)**

(e) Using the subtotals sheet, Create a column graph (bar graph) to compare the total cost of all items bought from each supplier. The x-axis should be labeled as "Names" and the y-axis "cost items'. Each bar should display a total value it represents on top of it and the supplier's Name below it. The title of the graph should read, SUPPLIERS COMPARISON TOTALS. Place the graph on a new sheet and rename the sheet as **BAR GRAPH (8mks)**

(f) Insert a new sheet into the workbook. Rename this sheet as "Filtered". Open the subtotals Sheet. Filter the records of all suppliers whose New price is greater than or equal to 6000 or less than 250. Copy the results onto the "Filtered" sheet. (6mks)

(g) Put the sheet name as the header and your name. School and index number as footer for every sheet in your workbook. Save your work on a removable storage media and p**rint ALL the worksheets**