KCSE 2024 FINAL PREDICTION

COMPUTER STUDIES

(PREDICTIONS TRIALS 1-10)

Final series of Possible Questions expected to be examined in the forthcoming Final Exams. This provides a framework and means of illumination to guide our candidates in preparation for the KCSE Examinations scheduled for November 2024

The following are Questions to expect in KCSE 2024.

CONFIDENTIAL!

For Marking Schemes

Mr Isaboke 0746 222 000 / 0742 999 000

ALL THE BEST IN KCSE!

KCSE 2024 FINAL PREDICTION

EXPECTED EXAM 1

451/1

COMPUTER STUDIES

PAPER 1 (THEORY)

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.
(b) This paper consists of TWO sections: A and B
(c) Answer ALL the questions in section A
*(d) Answer question 16 and any other **THREE** questions from section B*
(e) 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 Questions from This Section

1. Give **FOUR** characteristics of first generation computers? **(2marks)**

2. a) Why are powder fire extinguishers not allowed in the computer room? **(1 mark)**

b) What is the difference between delete and backspace keys? **(2 marks)**

3. Give **FOUR** factors that describe the ideal environment for a computer to work properly. **(2marks)**

4. Give **TWO** advantages of using sound output devices **(2marks)**

5. Give **TWO** application areas of OMR **(2marks)**

6. a) Distinguish between primary and secondary storage devices. (**2marks)**

7. State FOUR devices that support multimedia capability on a computer **(2marks)**

b) Differentiate between the terms: volatile memory and non-volatile memory. **(2marks)**

8. Differentiate between misreading and transposition errors in data processing **(2marks)**

9. What is the function of the power supply unit found in the system unit? **(2marks)**

10. (a) Name **FOUR** approaches that may be used to replace a Computerized Information system. **(2 marks)**

(b) Which of the approaches named in (a) above is appropriate for critical systems? Explain. **(2 marks)**

11. Terry intends to download a movie from the Internet. State the **two** factors that may determine the total time taken to complete the download. **(2 Marks)**

12. A lecturer keeps the following student details in a database: name, age, course.

(a) Write an expression you would use to compute the year of birth of a student using this year as the current year. **(2 marks)**

(b) What query expressions would the lecturer use to list the students whose age is above 15 years and below 25 years? **(2 marks)**

13. a) Explain each of the following roles performed by an operating system

i.Memory management **(2 marks)**

ii. Interrupt handling **(2 marks)**

14. A computer teacher has put a rule that flash disk should not be used in the computer laboratory

(a) Give a reason for the rule **(1 mark)**

(b) State two alternatives that can be used to achieve the same objective **(1 marks)**

15. (a) What is a utility software? **(1 mark)**

(b) Give **FOUR** examples of utility software **(2 marks)**

SECTION B (60 MKS)

Answer question 16 and any other 3 questions.

16. a) i) What is system maintenance? **(2marks)**

b) Differentiate between absolute and relative cell referencing. **(2marks)**

c) The formula A4 +C$5 is typed in cell D4 and copied to cell H6. Write down the formula as it would appear in cell H6. **(2marks)**

d) Generate output for the following pseudo code **(4marks)**

```
START
        X= 5
        WHILE (X<15) DO
                Y= X +2
X=X+3
PRINT X,Y
        ENDWHILE
        PRINT ("DONE',X)
STOP
```

e) Draw a flowchart for the above pseudo code **(5 marks)**

17. a) Using 10-bits binary number system, perform the following decimal operation using two's complement. **(4 marks)**

$129_{10} - 128_{10}$

b) Convert the following into binary $6CD_{16}$ **(2 marks)**

c) Perform the following binary arithmetic 11001.101+1110.011 **(2 marks)**

d) Define the following terms. **(3 marks)**

i) Record

ii) File

iii) Database

e) List any **FOUR** ways of dealing with a virus on a computer. **(4 marks)**

18. a) Explain the functions performed by **(2 marks)**

i) The control unit-

ii) Arithmetic and logic unit (ALU)

b) Define the following terms in relation to computer software . **(3 marks)**

i) Free ware.

ii) Proprietary

iii) Open source

c) i) Define the term E-commerce **(2marks)**

ii) List down **TWO** advantages of e- commerce as used in modern business environment **(2marks)**

d) Describe **THREE** ways how computing has been applied to each of the following areas:

i) Reservation systems. **(3 marks)**

ii) Law enforcement **(3 marks)**

19. (a) i) Name any **TWO** types of non-printable guides in DTP. **(1mark)**

ii) Explain the functions of each of non-printable guides in (19 (a)i) above **(4 marks)**

b) State FOUR factors to consider when designing a good file **(2 marks)**

c) Name **THREE** responsibilities that are carried out by a:

(i) Web administrator **(3 marks)**

(ii) Computer trainer **(3 marks)**

d) Identify **TWO** disadvantages of Observation method used in fact-finding. **(2 marks)**

20.(a) List **THREE** advantages of wireless communication over wired communication. (**3 marks)**

(b) Using a Diagram, describe the following signals and state where each is applied in network communication:

(i) Analog; **(2 marks)**

(ii) Digital. **(2 marks)**

(c) Name the **TWO** types of coaxial cables. **(2 marks)**

(d) (i) Define the term network protocol. **(1 mark)**

(e) List **FOUR** internet protocols **(2 marks)**

(f) Describe star topology as used in networking **(3 marks)**

KCSE 2024 FINAL PREDICTION

EXPECTED EXAM 1

451/2

COMPUTER STUDIES

PAPER 2 (PRACTICAL)

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 the software used in each question attempted in the printouts used.*

(d) *Answer* ***all*** *the questions.*

(e) *All questions carry equal marks.*

(f) *Passwords* ***should not be used*** *when saving files.*

(g) *All files must be transferred to the CD-R/ CD-RW.*

(h) *Make printouts of your answers on the papers provided for printing.*

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

(j) *Hand in all the printouts and the CD/removable storage medium provided.*

(k) Candidates should check the question paper to ascertain that all pages are printed as indicated and no questions are missing.

(l) Candidates must answer the questions in English.

For Marking Schemes Contact 0746 222 000 / 0742 999 000

1.(a) Open a word processing program and type the document below as it appears and save it as **CBC.** **(15 marks)**

PARENT'S ROLES IN COMPETENCY BASED CURRICULUM

Kenya has embraced a Competency Based Curriculum (CBC) to increase skills development and instill values in the learner. Parental empowerment and engagement in the learning process is essential to the learner's growth and development. As a parent, you are the first educator, trainer and source of authority for your child. The purpose of this brochure, therefore, is to give you more information about CBC and your role in the learning process of your child.

WHAT IS COMPETENCY BASED CURRICULUM?

This is a process that gives learners an opportunity to be actively involved in learning. It facilitates identification and development of learner's unique talents and abilities through different career pathways after grade 9. CBC assists learners acquire, nurture and apply values in day to day living

WHY THE CHANGE FROM 8-4-4 CURRICULUM TO CBC?

The Competency Based Curriculum was rolled out nationally in January 2019 in Early Years Education. The difference between 8.4.4 and CBC;

From 8-4-4	To CBC
Focuses on teaching	Focuses on practical learning
Focuses on memorization of content	Focuses on application of knowledge
Focuses on academic achievement	Focuses not only on academic achievement but also on skills development and nurturing of values
Focuses on examination and results	Focuses on what the learner is expected to achieve and provision of feedback on the learner's progress
Focuses on competition	Focuses on collaboration
Not all learners transited to the next level	Facilitates smooth transition for all learners
Less emphasis on talent and career progression	More emphasis on talent identification and career development
Less parental engagement in learning	More parental empowerment and engagement

GENERAL ROLES OF THE PARENT IN COMPETENCY BASED CURRICULUM

The following are general roles to support the learning of your child in CBC

- ∝ Provide basic necessities.
- ∝ Protect your child from physical and emotional harm.
- ∝ Instill and nurture morals and values.
- ∝ Teach and guide children to make the right choices and make them aware of consequences.
- ∝ Teach and model proper use of resources.
- ∝ Instill a sense of responsibility by ensuring children participate in age-appropriate chores.
- ∝ Help in enhancing learning achievements in your child as guided by the teacher.
- ∝ Engage with the teacher to enrich your child's learning experiences.
- ∝ Provide tender, loving care to boost your child's emotional safety and a sense of belonging.
- ∝ Take part in school activities such as academic clinics, talent

Required

b) Set page margins as follows:

i) Left margin: 6 Picas **(2 marks)**

ii) Right, Top and Bottom margins: 3 Picas **(2 marks)**

c) Apply 1.5 line spacing on the entire document **(2 marks)**

d) Insert an in margin drop cap on paragraph 1 dropped to 4 lines **(2 marks)**

e) Save the document as **CBC-1** **(2 marks)**

f) Print out the following:

i) CBC **(2 marks)**

ii) CBC-1 **(2 marks)**

2.(a) The following is an extract from Wavumbuzi Entrepreneurship Challenge showing the performance of different participants over the Six-week period.

	A	B	C	D	E	F	G	H	I	J	K	L
1	WAVUMBUZI ENTREPRENEURSHIP CHALLENGE											
2				SCORED POINTS								
3	NAME	SEX	SCHOOL	WK 1	WK 2	WK 3	WK 4	WK 5	WK 6	TOTAL POINTS	AVERAGE POINTS	MEDAL
4	Sarah	F	LSS	80	180	360	500	700	900			
5	Dennis	M	MHS	100	200	300	400	650	800			
6	Jules	F	CSS	75	120	225	350	480	600			
7	Faith	F	BHS	60	100	250	320	450	630			
8	Dylan	M	KHS	90	150	350	600	750	680			
9	Kenan	M	FMSS	70	160	210	320	500	700			
10	Sheillah	F	SSS	80	170	300	480	535	670			
11	Pauline	F	NHS	100	250	400	650	800	1000			
12	Albert	M	JSS	50	100	200	430	500	660			
13	Fionah	F	MGHS	80	150	320	450	490	600			
14												
15	TOTAL FOR FEMALE											
16	TOTAL FOR MALE											

i) Using a spreadsheet package, enter the above information and save it as **Wavumbuzi Challenge** **(11 marks)**

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

iii) Rename the worksheet containing the data as ***Wavumbuzi-1*** **(1mark)**

iv) Copy the contents of *Wavumbuzi-1* to another worksheet and rename it as ***Wavumbuzi-2*** **(2 marks)**

b) Type a formula at:

i) Cell J4 to compute the total points for Sarah **(2 marks)**

ii) Apply the formula to the appropriate cells **(1 mark)**

c) Type a function at:

i) Cell K7 to compute the Average Points for Faith. **(2 marks)**

ii) Apply the function to the appropriate cells. **(1 mark)**

d) A participant earns a medal based on the Average Points scored as follows:

Average points	Medal
500 and above	Gold
300-499	Silver
Below 300	Bronze

i) Type a formula in L5 to determine David's medal **(3 marks)**

ii) Apply the formula to other appropriate cells **(2 marks)**

e) Insert a blank column after average points and label it RANK. Using appropriate function, compute the rank of the participants based on the average points in descending order **(5 mrks)**

f) (i) Using appropriate functions, compute the:

(a) Total points for the female per week in cell D15 **(2 marks)**

(b) Total points for the male per week in cell D16 **(2 marks)**

ii) Apply the functions to the appropriate cells **(2 marks)**

g) Using **Wavumbuzi-1** worksheet, create a **bar chart** showing how various participants performed in the six-week challenge and Move it to a new worksheet: **(7 marks)**

i) Insert the Chart Title as: **WAVUMBUZI SIX WEEK CHALLENGE PERFORMANCE**

ii) Insert X-axis as: **PERFORMANCE SCORES**

iii) Insert Y-axis as: **PARTICIPANT NAME**

iv) Display the legend at the bottom

v) Rename the worksheet containing the chart to ***WavumbuziChart***

h) Print out each of the following: **(3 marks)**

i) Wavumbuzi -1

ii) Wavumbuzi-2 (showing the formulas)

iii) WavumbuziChart

KCSE 2024 FINAL PREDICTION

EXPECTED EXAM 2

COMPUTER STUDIES

451/1

PAPER 1 (THEORY)

TIME: 2½ HOURS

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

Kenya Certificate of Secondary Education.

INSTRUCTIONS TO CANDIDATES

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

FOR EXAMINER'S USE ONLY

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

SECTION A (40 Marks)

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

1. Give **TWO** reasons why Powder type fire extinguishers are not recommended to be used in a computer laboratory. **(2 Marks)**
2. State the purpose of each of the following memories in a computer system. **(2 marks)**

(i) ROM

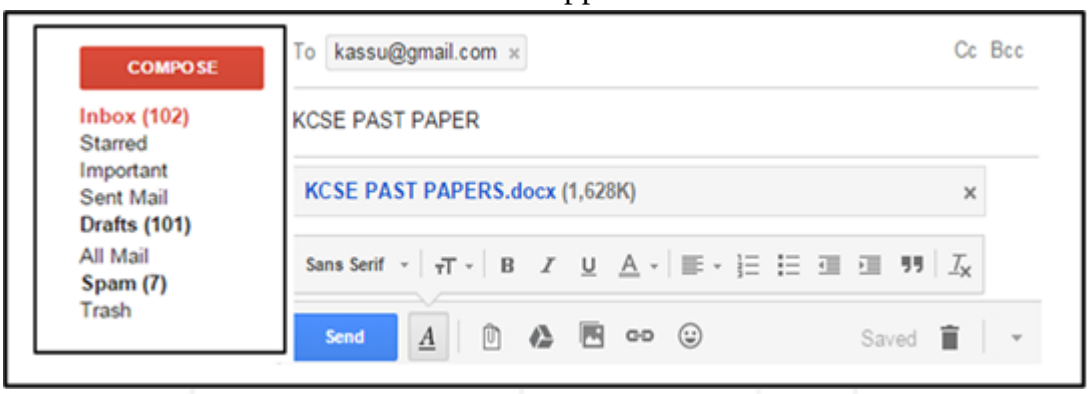
(ii) RAM

3. State two factors that one would consider when selecting data entry method in computing. **(2 Marks)**
4. Describe the following types of printers and state one application area of each. **(3Marks)**

(a) Dot matrix

(b) Thermal printer.

5. Differentiate between in-house software and freeware. **(2 Marks)**
6. Give two importance of feedback mechanism in systems **(2 Marks)**
7. With an aid of a diagram, explain one-to-one database relationship. **(2 Marks)**
8. KASSU Secondary School intends to set up internet connection in their school for e-learning purposes. Advise the school management on four internet connectivity requirements that is required for them to be able to access internet. **(2 Marks)**
9. The figure below shows an extract of an e-mail application.



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

(a) Trash

(b) Spam

(c) Inbox

10. State two ways in which users in an organization can be a security threat to data in an information system. **(2 Marks)**
11. State three negative impact of information communication technology on the Environment. **(3 Marks)**
12. In a computer based information system, state the purpose of the following files and give **one** example where such a file may be required in a school. **(4 marks)**

a. Report file.

b. Sort file.

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

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

a. Simulation

b. Tutorial

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

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

SECTION B (60 MKS)

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

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

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

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

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

a) Write a pseudo code that would show him know the charges of calls with an appropriate label when he the inputs type of call and the time where appropriate. Use a 24 hour clock. **(8marks)**

b) Design a flowchart for the pseudo code in 16(a) above **(7marks)**

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

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

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

d) i) Using appropriate examples, differentiate between distributed and centralized processing modes **(3marks)**

ii) State one advantage and one disadvantage of distributed processing modes in 17(d) (i **(2marks)**

e) i) With reference to an operating system, differentiate between formatting and partitioning. **(2marks)**

ii) List any **TWO** types of user interface. **(2mark)**

18. a) Using eight bits and twos complement, subtract 78_{10} from 17_{10}. Give your answer in decimal notation **(3marks)**

b) Convert 11011011111.1111_2 to:

i) Octal **(2marks)**

ii) Hexadecimal **(2marks)**

iii) Decimal **(2marks)**

c) State any **Two** methods used to gain illegal access to a computer system **(2marks)**

d) i) Distinguish between peer-to-peer and client –server LANs. **(2marks)**

ii) Atieno was very happy when she bought a Safaricom 2G modem for she was able to easily connect her computer to the Internet. After six months she noticed it was taking her too long to connect to the Internet. State two possible causes of the problem. **(2marks)**

19. a)i) Explain any **two** causes of system change. **(2marks)**

ii) Explain any **THREE** causes of system maintenance. **(2marks)**

b) i) Use of questionnaire is one of the most popular fact finding method. State any **TWO** advantages and **TWO** disadvantages of using this method to gather data. **(2marks)**

ii) Explain the importance of requirement specification phase of Systems development.**(2marks)**

c) Explain **TWO** reasons why a new system is tested before implementation. **(2marks)**

d)i)State two duties performed by a system administrator. **(1mark)**

ii) The principal of a school is attempting to convince his staff to us CAL and CAI software. State one benefit and one limitation of using such software. **(2marks)**

e) State one advantage and one disadvantage of using expert systems in medicine**(2marks)**

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

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

ii) Technology has been blamed for polluting the environment.

Explain how computer technology has contributed to this. **(2marks)**

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

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

i) Split the above structure into **THREE** tables and for each table identify an appropriate primary key. **(5marks)**

ii) Design well labeled tables structures and identify foreign keys **(3marks)**

KCSE 2024 FINAL PREDICTION

EXPECTED EXAM 2

COMPUTER STUDIES

451/2

PAPER 2 (PRACTICAL)

TIME: 2½ HOURS

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

Kenya Certificate of Secondary Education.

INSTRUCTIONS TO CANDIDATES

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

Question One

The following data is an extract of data obtained from Movers Transport company records. Study the data and answer the questions that follow.

AREA	PRODUCER ID	NAME	QUANTITY DELIVERED (KG)	TOTAL COST	TRANSPORT COST	GROSS COST	DEDUCTION	NET PROFIT
101B	115	Selina Mwao	4562					
79A	145	Yvonne Kibet	1254					
79A	012	Dorothy Namulungu	235					
79A	561	Tiffany Wangui	8954					
101B	016	Asha Waningu	9658					
20Z	123	Ruth Mellanie	7895					
20Z	458	Afif Mumtaz	456					
101B	654	Pelah Wonder	421					
20Z	758	Christabel Simbauni	7895					

a) Enter the data shown above into a spreadsheet giving it an appropriate title, center and bold across the worksheet. Save the workbook as WORK01. Rename the worksheet as Jan records **(10 Marks)**

b) Copy the data to a new worksheet and add the details of producer Valence Masitsa of area 101B, ID 452 with quantity of produce of 2,700kg in an appropriate row. **(1 Mark)**

c) Insert double borders around every cell and every row. **(2 Marks)**

d) Use a function to calculate the Total cost for the producer with ID number 115 given that the price per KG of the produce is Sh.41 .00 **(2 Marks)**

e) Use the formula for Total cost obtained for producer Selina Mwao and use it to calculate the gross cost for all the farmers **(2 Marks)**

f) Use if function to calculate transport cost for all the producers given that transport is charged per Kg is as follows **(5 Marks)**

AREA	Price per kg
101B	5.00
20Z	3.50
79A	4.00

g) Insert the value 20% in cell E14. Using absolute cell referencing calculate deductions, given that the deduction is 20% of the Total cost. **(4 Marks)**

h) Using a function calculate the Net cost, given that Net cost is Gross cost minus deductions and gross cost is Total cost plus Transport cost **(4 Marks)**

i) Format the columns containing currency values to currency with 2 decimal places and prefix Ksh. Rename the worksheet PRODUCE PAY. **(3 Marks)**

j) Arrange the records in ascending order of the producer ID. **(2 Marks)**

k) Copy the contents of worksheet Jan records to a new worksheet and rename it as Filtered. By applying suitable filter condition, display records for all producers except those from area 79A. **(4 Marks)**

1) Use subtotals function to calculate subtotals for the quantity delivered, gross pay and net pay from each area. **(3 Marks)**

m) Create an embedded pie chart showing the total quantity of produce delivered for each area .The chart should have the following details.

i. Chart title: Area Total produce delivered

ii. Legend Position: Right

Save it as CHART 1 **(5 Marks)**

n) Print Jan records, Produce Pay and Filtered in landscape orientation. **(3 Marks)**

Question 2

You are part of a wedding committee of your friend and you have a vast knowledge of using a computer; you are tasked to be in charge of the wedding cards. Using a desktop publishing software, design the wedding card as it appears. Name the file as **W-Card.** **(24marks)**

(a) Prepare the page layout specifications as follows:

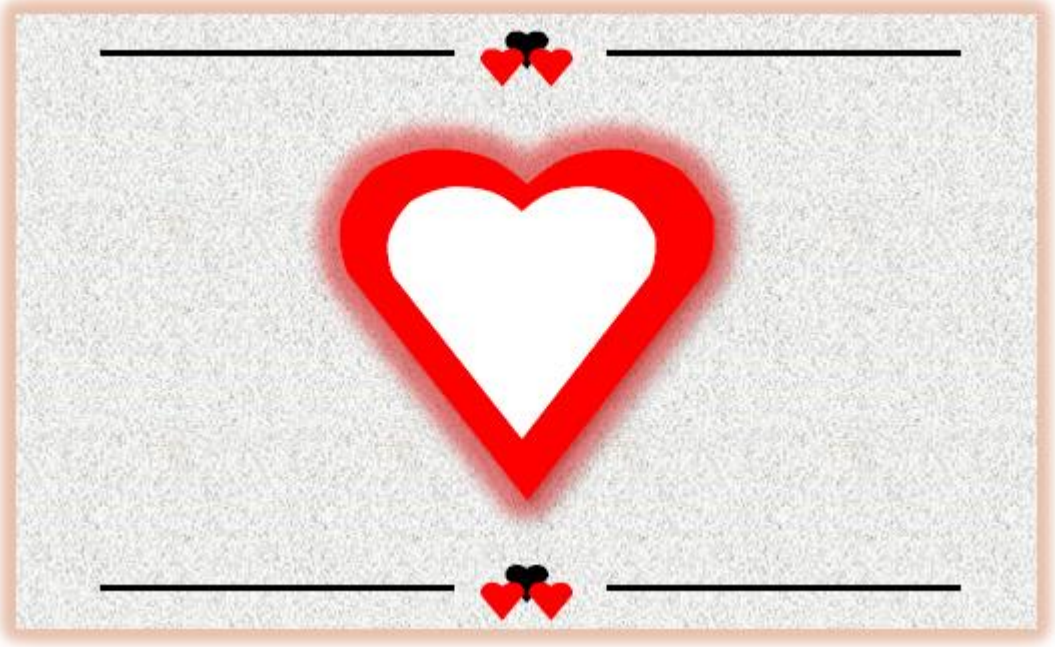
(i) Paper size: A4 portrait **(2mks)**

(ii) Grid guides **(3mks)**

- Column guides: 1
- Row guides: 2
- Spacing: 0.3”

(iii) Margins guides **(2mks)**

- Left and right: 0.24”
- Top and bottom: 0.25”



TOGETHER WITH OUR PARENTS
MR. & MRS. DOMINIC OKOTH
AND
MR. & MRS. ANNE NJIRU

TOMASO OKOTH

AND

SANDRA NJIRU

Request the blessings of your company at the celebration of our union.

SATURDAY THE 21ST OF MARCH TWENTY NINETEEN
AT TWELVE O'CLOCK IN THE AFTERNOON
ST. CATHEDRAL ATHENA, 680 PARK, KIMATHI STREET IN NAIROBI

RSVP:
TOMASO—072116532
SANDRA– 075236455

Reception to follow

FOR INVITED GUESTS ONLY

(b) Format the Outer heart shape in the middle part of the design to the following specifications:

(4marks)

i. **Color**: Red
ii. **Outline**: Light blue
iii. **Height**: 2.64”
iv. **Width**: 2.84”

(c) Perform the following formatting on the rectangle of the first part of the design.

i. Apply an outline **shadow**. **(1mark)**

ii. Background Texture fill - **Newsprint**. **(2Marks)**

iii. Add a glow (**Accent 1, 18pt glow**), glow size **25pts**, and **57% transparency.** **(4marks)**

(d) Change the paragraph text starting from **"Request the blessings…"** to color **cold** with line spacing of **0.75sp**. **(2marks)**

(e) Format the names of the bride and bridegroom to have a **strikethrough** and a **dotted underline.** **(2marks)**

(f) Group all objects in the design. **(2marks)**

(g) Insert a page header **"LOVE IS A GOOD THING"**. **(1mark)**

(h) Print the publication. **(1mark)**

THIS IS THE LAST PRINTED PAGE

KCSE 2024 FINAL PREDICTION

EXPECTED EXAM 3

451/1

COMPUTER STUDIES

PAPER 1

TIME: 2½ HOURS

NAME……

SCHOOL…… **SIGN**……

INDEX NO…… **ADM NO**……

(Kenya Certificate of Secondary Education)

INSTRUCTION TO CANDIDATES

- Write your name and index number in the spaces provided above
- *This paper consists of **two** sections **A** and **B**.*
- *Answer **ALL** questions in section **A**.*
- *Answer question 16 and any other THREE questions from section B.*
- *All answers should be written in the spaces provided on the question paper.*

For Examiners Use Only

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

SECTION A

*Answer **ALL** questions*

1. Give **two** reasons why smaller computers like Laptops tend to be more expensive than Desktop computers. **(2 marks)**

2. a). State **two** keyboard keys that work in a state of On/Off switches in **operation** **(1 mark)**

b). State **four** factors you would consider when choosing a secondary storage device **(2 marks)**

3. i) What is distributed data processing? **(1 mark)**

ii) Outline **two** advantages of distributed data processing in an organization **(2marks)**

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

5. (a) Write the following acronyms in full as used in operating systems.

(i) GUI **(½ mark)**

(ii) WIMP **(½ mark)**

(b) State **two** factors considered when choosing an operating system for use in a computer**.(2 mks)**

6. a) Define the term audit trail **(1 mark)**

b) List any **three** ways of recovering data lost through accidental erasure. **(3marks)**

7. State **three** functions of an email software. **(3marks)**

8. Name **two** responsibilities that are carried out by a computer programmer **(2 marks)**

9. State **three** ways in which ICT can improve the access of News in Kenya. **(3marks)**

10. Give **three** reasons why people prefer in-house developed application programs to general-purpose application packages. **(3marks)**

11. State any **two** negative impacts of ICT on the environment **(2 marks)**

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

13. A computer teacher wants to minimize illegal entry of people to a computer laboratory. Explain **three** measures which have to be put in place in order to curb this illegal entry. **(3 mks)**

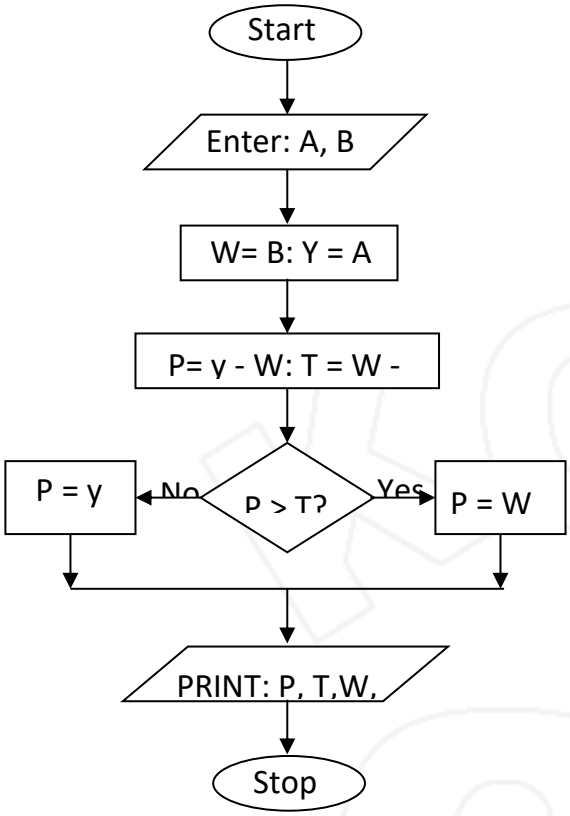
14. Outline **two** benefits of mail merging. **(2 marks)**

15. 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 **two** ways of ensuring this is effected. **(2 marks)**

SECTION B: (60 MARKS)

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

16. (a) Study the flowchart **below** and answer the questions that follow.



(i) State the name of the control structure shown in the flowchart. **(1 mark)**

(ii) Assuming the user keys in 12 and 19 when prompted to enter the values for B and A respectively, determine the printed values of P, T, W and y. **(4 marks)**

(iii) Write the pseudo code that would be used in place of the flowchart. **(6 marks)**

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

c) State any **two** advantages of low level languages**.** **(2 marks)**

17.

a) The following are some of the phases in the systems development life cycle (SDLC): system analysis, system design, system implementation, system review and maintenance. State **four** activities that are carried out during the system implementation phase **(4 marks)**

b) Give **three** reasons why system maintenance phase is necessary in SDLC **(3 marks)**

c) State **two** instances where observation is not a viable method of gathering information during system analysis stage **(2 marks)**

d) Various considerations should be made during input and output design. State **two** considerations for each case **(4 marks)**

e) List **two** sources of computer viruses **(2 marks)**

18. a) Use twos complement to perform the following arithmetic operations

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

ii) 10111_2-1011_2 **(4marks)**

b) 1011_2 is a ones complement binary representation of a number using four bits work out the likely positive equivalent in base 10. **(2marks)**

c) Convert the decimal fraction 10.375_{10} to its binary equivalent. **(4marks)**

d) Assuming the existence of base six, list the numbers that would be used in the number system. **(1mark)**

19. a) i)Write the acronym DBMS in full. **(1mark)**

(ii) State any **three** functions of a DBMS. **(3marks)**

b) Indicate the type of cell reference depicted by the following. **(3marks)**

i) H5……

ii) H $ 5……..……..

iii) H5……..……..

c) Mr. Maanzo is a teacher at Soyet High school and wishes to use Spreadsheet to process the marks obtained by his students during the term. The worksheet below shows the details used.

A	B	C	D	E	F	G	H	I
1	NAME	CAT-1	CAT-2	CATTOTAL	EXAM	TOTAL	GRADE	PST
2	Susan Muani	14	06		56			
3	Peter Kwena	13	08		34			
4	Mary Ann	10	04		59			
5	Paul Njeru	11	07		57			
6	Janet Frida	06	09		48			
7	Justin Gerard	08	07		50			

NB:CAT -1 and CAT -2 are out of 15 marks each and EXAM is out of 70 marks

(i) **Write** a function that displays "PASSED" when the total marks is >60 otherwise display "FAIL". **(2marks)**

(ii) **Write** a function that assigns Paul P positions according to the total marks. **(2marks)**

d) Use illustrations to explain **two** text alignment features used in electronic word processors **(4 mks)**

20. a) Match the following statements with repeater, router or a bridge. **(2 marks)**

	STATEMENT	DEVICE
	Operates at data link layer	
	Determine the best path for data to follow	
	Regenerates signals	
	Forwards everything which it doesn't recognize	

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

c) Write the following abbreviations in full. **(2 marks)**

i. F.T.P

ii. H.T.T.P

d) With the aid of a diagram, discuss Hybrid topology. **(3 marks)**

e) State **two** advantages of using fiber optic cables. **(2 marks)**

(d) Explain the meaning of the following terms as used in signal transmission. **(2 marks)**

i. Attenuation

ii. Noise

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KCSE 2024 FINAL PREDICTION

EXPECTED EXAM 3

451/2

COMPUTER STUDIES

PAPER 2

TIME: 2½ HOURS

NAME……

SCHOOL…… **SIGN**……

INDEX NO…… **ADM NO**……

(Kenya Certificate of Secondary Education)

INSTRUCTIONS TO CANDIDATES:

(a) Indicate your name and index number at the top right-hand corner of each printout.

(b) Write your name and index number on the CD/Removable storage medium provided.

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

(d) Answer all the questions.

(e) All questions carry equal marks.

(f) Passwords should not be used while saving in the CD/Removable storage medium.

(g) All answers must be saved in your CD/Removable storage medium.

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

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

(j) Hand in all the printouts and the CD/Removable storage medium used.

(m)Candidates should answer the questions in English

Question One

The data in the tables below were extracted from Bondo Sub county Games Management system.

Table 1: TEAMS TABLE

Team Code	Team Name	Address	Tel. No.	Reg. Fee
01	Majiwa High School	Box 0012	021542148	5,000
02	Maranda High School	Box 2454	025485267	3,500
03	Usenge High School	Box 458	025478756	4,700
04	Akoko Mixed Secondary	Box 635	032547855	2,400
05	Kipasi Secondary School	Box 2446	032458754	1,200
06	Kapiyo Secondary School	Box 6589	015487564	1,400
07	Nyang'oma Boys	Box 1254	031204543	5,000

Table 2: RESULTS TABLE

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

(a) Create a database named **Football** to store the data above**.**

(12marks)

(b) Format the *Reg. Fee* field as follows:

(i) To display the entries with the prefix: "KSh."Correct to two decimal places. **(2marks)**

(ii) Restrict entries to positive values only and should return an error message "*Error: enter positive values only*" if an out of range value is entered. **(2marks)**

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

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

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

(f) Create a query named **TotalGamesQuery** to display the fields: Team Code, Team Name and Total games played**.** **(4 marks)**

(g) Create a query to show the team name and total points. (**Note: A Win in a game earns team 3 points, a draw 1 point and a loss 0**). The query should show the 3 best teams based on the total points. Save the query as **BestTeamsQuery**. **(5 marks)**

(h) Create a report named **RegReport** to display the Team Name, Address, Reg. Fee. The report should show the total registration fee collected from all teams. **(5marks)**

(i) Sort the records to show the team that has paid the highest amount of registration fee first. **(2 marks)**

(ii) Title the report as "*income from registration*". **(2 marks)**

(i) Print each of the following: **(2marks)**

(i) Teams table and Results table

(ii) TotalGamesQuery and BestTeamsQuery RegReport.

Question Two

(a) Type the following passage using a word processing package and save as **Networking**. Answer the questions that follow. **(25marks)**

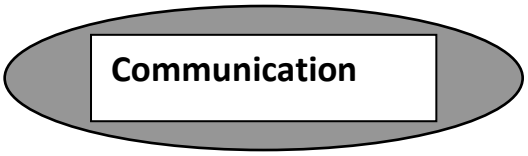
COMPUTER NETWORK

A Computer network is a group of computers and other devices connected together by a suitable media.

Advantages of computer Networks

1. Multiple users can communicate, exchange and share information

2. Resource sharing including program, data base, hardware etc. is possible



By definition communications refers to the transfer of information from one place to another between two individuals using agreed symbols, signs or even human behavior such as nodding. Exchange of information relies on a communication system to convert, amplify and send signal through a common medium. Message, Sender, Medium and Receiver are the essential components of communication systems. If a system is extended by cascading more communication systems, it is called networked systems.

In case communication involves the sending of information over a significant distance, it must use telecommunications as an aid. By definition, telecommunications refers to the transmission of information between distant locations by some electromagnetic means.

Data communications is defined as the interchange and processing of encoded (digital that is, 1s and 0s) information between distant locations using telecommunications.

Data communications is regarded as the collection and distribution of the electronic representation of information which can be text, voice, graphics or image, from and to remote computing facilities. As information can only be carried to the remote site provided that the information carrier supports that particular type of data transmission, information may undergo data conversion processes if the nature of data signal is incompatible with the characteristics of the signal carrier.

Communication networks are usually defined by their size and complexity. We can distinguish four main types:

- ***Local area networks (LAN).*** These networks connect computer equipment and other terminals distributed in a localized area, e.g. a university campus, factory, office. The connection is usually a cable or fibre, and the extent of the cable defines the LAN.
- ***Metropolitan area networks (MAN).*** These networks are used to interconnect LANs that are spread around, say, a town or city. This kind of network is a high speed network using optical fibre connections.

Classification of communication networks

- ***Wide area networks (WAN).*** These networks connect computers and other terminals over large distances. They often require multiple communication connections, including microwave radio links and satellite.

COMPARISON AMONG DIFFERENT TOPOLOGIES

Below are the advantages and disadvantages of various LAN topologies.

Type	Advantage	Disadvantage
Star	Simple and easy to identify fault	Failure of central node causes disaster
Irregular (Mesh)	Immunity to bottleneck and failure problems	Expensive to provide an alternative routing
Bus	Simple to control traffic flow	Only a single communications channel is required to service all the nodes
Ring	Simple to implement	One channel is required to service all

TRANSMISSION MEDIA

Transmission can be by cable or wireless methods. There are 3 common types of cable:

- **Twisted pair,**
- **Co-axial**
- **Fiber optic.**

Wireless transmission includes:

- Microwave transmission.
- Satellite transmission.
- Radio waves transmission.
- Infrared transmission.

TWISTED PAIR

Consists of two insulated copper wires arranged in a regular spiral pattern to minimize the electromagnetic interference between adjacent pairs

Often used at customer facilities and also over distances to carry voice as well as data communications.

TWISTED PAIR ADVANTAGES

- Inexpensive and readily available

- Flexible and lightweight
- Easy to work with and install

TWISTED PAIR DISADVANTAGES

- Susceptibility to interference and noise
- Attenuation problem
- For analog, repeaters needed every 5-6km
- For digital, repeaters needed every 2-3km
- Relatively low bandwidth (3000Hz)

CO-AXIAL CABLE

- Used for cable television, LANs, telephony
- Has an inner conductor surrounded by a braided mesh
- Both conductors share a common center axial, hence the term "co-axial"

CO-AXIAL ADVANTAGES

Higher bandwidth

- 400 to 600Mhz
- Up to 10,800 voice conversations
- Can be tapped easily (pros and cons)
- Much less susceptible to interference than twisted pair

CO-AXIAL DISADVANTAGES

- High attenuation rate makes it expensive over long distance
- Bulky
- Greater capacity (bandwidth of up to 2 Gbps)
- Smaller size and lighter weight
- Lower attenuation
- Immunity to environmental interference
- Highly secure due to tap difficulty and lack of signal radiation

FIBER OPTIC CABLE

- Relatively new transmission medium used by telephone companies in place of long-distance trunk lines
- Also used by private companies in implementing local data communications networks
- Require a light source with injection laser diode (ILD) or light-emitting diodes (LED)

ADVANTAGES OF FIBER OPTIC

- Greater capacity (bandwidth of up to 2 Gbps)
- Smaller size and lighter weight
- Lower attenuation
- Immunity to environmental interference
- Highly secure due to tap difficulty and lack of signal radiation

DISADVANGES OF FIBER OPTIC

- Expensive over short distance
- Requires highly skilled installers
- Adding additional nodes is difficult

(B) Required:

(i) Open a new document then copy and paste the content of Networking on the new document **(2marks)**

(ii) Save the new document as **Networking Edited.** **(2marks)**

(iii) Change the title Computer Network as follows. **(4marks)**

Alignment – Centre
Font Size – 23
Font colour - Red
Font type –Elephant
Kerning -12 point
Spacing –Expanded
Scale- 100%
Position- Raised

(iv) Convert the paragraphs immediately under **Communications** into a hanging indent**.(2marks)**

(v) Insert your name into the passage as a footer and Index number at the Header. **(4 marks)**

(vi) Convert the paragraph under Classification **of communication networks** to two columns and justify them. **(4 marks)**

(vii) Insert Water mark a cross the page the page " **COMPUTER NETWORKING** " **(2marks)**

(viii) Change the Drop cap lines to two. **(1mark)**

(ix) Insert page border using the following setting. **(2marks)**

Border – Shadow
Border – Three line
Colour - Orange

(x) Print the document networking and Networking Edited. **(2marks)**

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KCSE 2024 FINAL PREDICTION

EXPECTED EXAM 4

451/1 Computer Studies Paper 1

Time: 2½ Hours

NAME……

SCHOOL…… **SIGN**……

INDEX NO…… **ADM NO**……

Kenya Certificate of Secondary Education.

INSTRUCTION TO CANDIDATES

(a) Write your name and index number in the spaces provided above
(b) Sign and write the date of examination in the spaces provided
(c) *This paper consists of* ***two*** *sections:* ***A*** *and* ***B***
(d) *Answer all the questions in section* ***A***
(e) *Answer question* ***16*** *and other* ***three*** *questions from section* ***B***
(f) ***All*** *answers should be written in the spaces provided on the question paper.*

For Examiner's Use Only

Section	Question	Maximum Score	Candidate's Score
A	1-15	40	
B	16	15	
	17	15	
	18	15	
	19	15	
	20	15	
		Total Score	

SECTION A (40 Marks)

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

1. Give reasons why the following fire extinguishers are not recommended for use in the computer laboratory. **(2 Marks)**

i. Liquid based

ii. Powder based

2. Differentiate between embedded and integrated computers **(2 Marks)**

3. Describe the following terminologies as used in reference to visual display unit. **(4 Marks)**

a. Resolution

b. Color depth

4. Describe the following components of a spreadsheet: **(3 Marks)**

a. Worksheet

b. Database

c. Graphs

5. a. State two threats to data and information. **(1 Mark)**

b. List four types of risks posed by computer viruses to the computer systems. **(2 Marks)**

c. State two measures against unauthorized access. **(2 Marks)**

6. Automated production is an effect of ICT on employment, state three advantages of automated production. **(3 Marks)**

7. Describe the following terms used in reference to the CPU: **(3 Marks)**

a. Fetch

b. Decode

c. Execute

8. Explain three functions of an information system. **(3 Marks)**

9. Describe the following terms as used in system development: **(4 Marks)**

i. Control

ii. System entropy

10. Define the term hot- swapping **(1 Mark)**

11. State two functions of the power supply unit **(2 Marks)**

12. Define peripheral device interfacing **(2 Marks)**

13. Explain the following terms as used in the word processing. **(2 Marks)**

i. Footnote

ii. Endnote

14. a) Explain a situation when each of the following Desktop Publishing programs features may be used when creating a document **(2 marks)**

(i) Crop

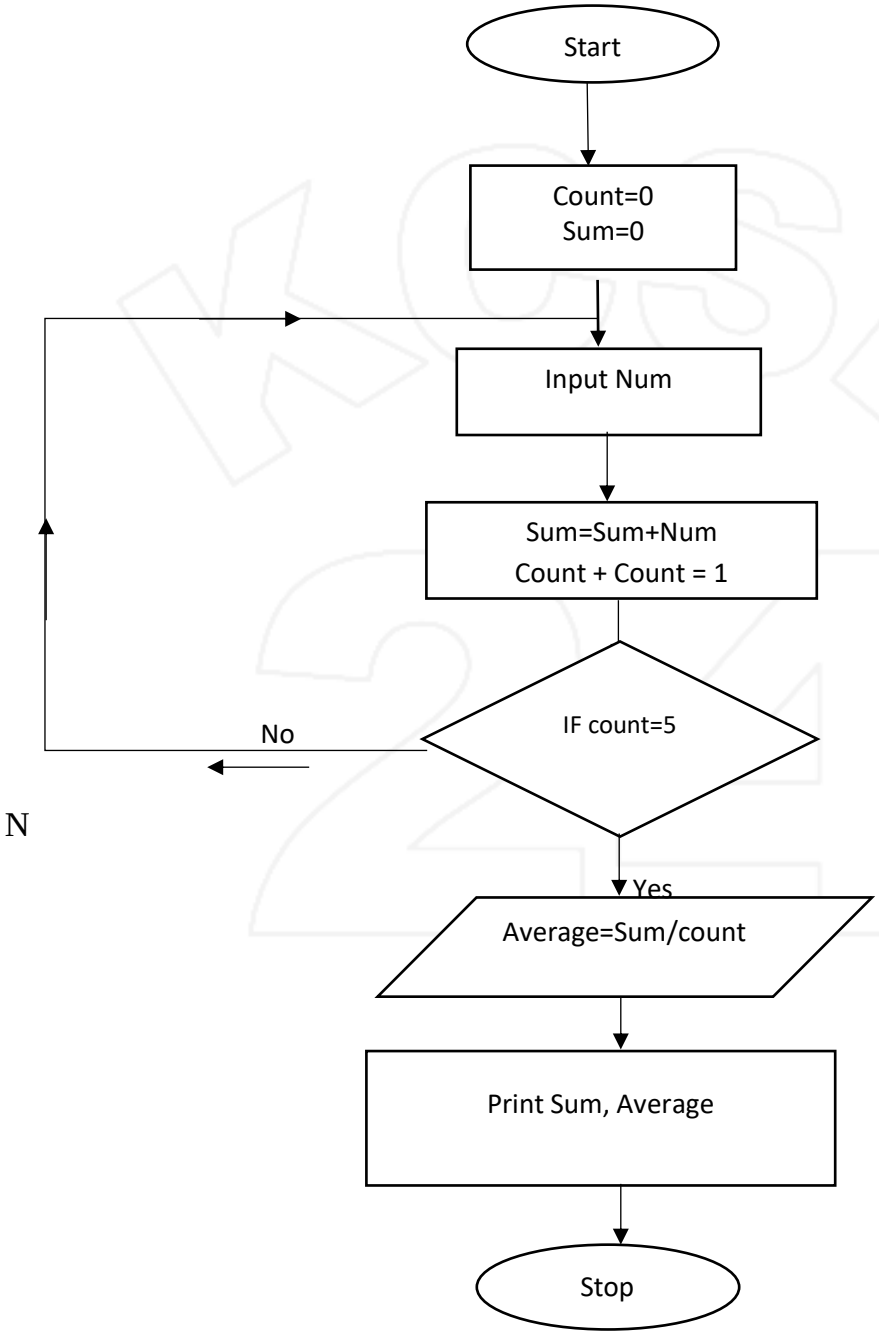
(ii) Transparency

15. Name any two types of non-printable guides in DTP. **(2 Marks)**

SECTION B (60 Marks)

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

16. A program is expected to accept 10 numbers calculate their sum and average and produce the output. Below is a flowchart that was used by KASSU students to represent the program. Study the flowchart below and answer the questions that follow:



a) The flowchart has errors in it. Identify any four errors that were made in the flowchart stating how each of them should be corrected. **(4 marks)**

b) Write a pseudocode for the corrected version of the above flowchart. **(7 marks)**

c) i) Give any two examples of fourth generation languages. **(2 Marks)**

ii) List two factors that need to be considered when selecting a programming language.(**2 marks)**

17. a) Outline two disadvantages of questionnaires as a data gathering techniques. **(2 marks)**

b) State three activities that take place during system implementation phase of SDLC. (**3 marks)**

c) Define the term Feasibility study as used in system development. **(1 mark)**

d. **Perform the following conversions**

i. Convert 111.010_2 to decimal number. **(3 marks)**

ii. **$17^4/_5$ (base 10)to binary** **(3 marks)**

iii. Distinguish between BCD and EBCDIC coding schemes **(2 mark)**

e. Give two reasons why a firm may decide to computerize its operations **(1 mark)**

18. a. Describe the following data types as used in spreadsheet. **(4 Marks)**

i. Labels
ii. Values
iii. Formulas
iv. Range

b. Differentiate between logical files and physical files. **(4 Marks)**

c. i. Define serial file organization **(1 Mark)**

ii. Name any two disadvantages of serial file organization **(2 Marks)**

d. Give two advantages of using a template in a word processor **(2 Marks)**

e. State two components found in an electronic Point-of-sale terminal. **(2 Marks)**

19.a. Describe the following types of software **(3 Marks)**

i. Proprietary software

ii. Shareware

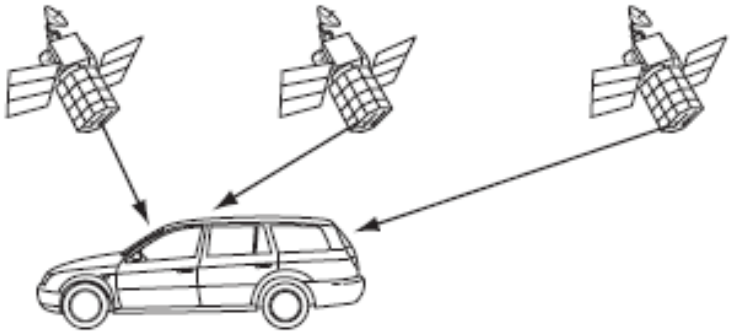
iii. Freeware

b. i, Define the term deadlock as used in operating system. **(1 Mark)**

ii. The diagram shows five operating system functions and five descriptions. Draw a line between each operating system function and its description. **(4mks)**

Function	Description
Interrupt	Many processes appear to run simultaneously
Utility	Data are temporarily held in a buffer waiting for an output device to access it
Memory Management	A signal that causes the operating system to take a specified action
Spooling	A program that performs a specific task required for the operation of a computer
Multitasking	A process of assigning blocks of memory to programs running in a computer

c. Satellite navigation systems are used to give the vehicle driver directions.



i. How does the system know the exact position of the vehicle? **(3 Marks)**

ii. Give two advantages to the driver using this system. **(2 Marks)**

iii. Give two problems associated with satellite navigation systems. **(2 Marks)**

20. a. Define the following terms

i. Trouble shooting **(2 Marks)**

ii. Installation

b. Describe any two types of files used in operating systems. **(2 Marks)**

c. A database table, DEVICE, has been set up to record the electronic equipment used in a small business

Device ID	Device Type	User	Purchase Date	Purchase Price ($)	Portable
3	Desktop	Alan Swales	14/02/2017	1350.00	N
4	Laptop	Chantel Law	01/02/2016	1460.00	Y
5	Tablet	Abdula Saud	31/12/2016	1000.00	Y
6	Desktop	Abdula Saud	14/03/2017	1000.00	N
7	Laptop	Alan Swales	15/03/2016	1700.00	Y
8	Tablet	Taona Jaji	16/12/2016	470.00	Y

(a) The query-by-example grid below selects certain records.

Field:	User	Portable	Purchase Price ($)
Table:	DEVICE	DEVICE	DEVICE
Sort:	Ascending		
Show:	☑	☐	☐
Criteria:		Y	>1000
or:			

Show what would be the output from the query-by-example. **(2 Marks)**

(b) Complete the query-by-example grid below to select all Desktop devices that were either purchased before 31/12/2016 or cost under $1000. Only show the Device ID and Device Type. **(5 Marks)**

Field:	Device ID	Device Type	Purchase Date	Purchase Price
Table:	DEVICE	DEVICE	DEVICE	DEVICE
Sort:				
Show:				
Criteria:				
Or:				

c. Differentiate between a primary key and an index key **(2 Marks)**

d. State the title of the ICT personnel in charge of regularly updating the organization's website. **(1 Mark)**

e. What program is the personnel above likely to use to accomplish his tasks? **(1 Mark)**

KCSE 2024 FINAL PREDICTION

EXPECTED EXAM 4

451/2 **Computer Studies** Paper 2

Time: 2½ Hours

(PRACTICAL)

NAME……

SCHOOL…… **SIGN**……

INDEX NO…… **ADM NO**……

Kenya Certificate of Secondary Education.

Instructions to candidates

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

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

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

(d) *Answer all the questions*

(e) *All questions carry equal marks*

(f) *Passwords should NOT be used while saving in the CD/Removable storage medium*

(g) *All answers must be saved in your CD/Removable storage medium*

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

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

(j) *Hand in all the printouts and the CD/Removable storage medium used*

QUESTION ONE



What Is Artificial Intelligence?

Artificial Intelligence is the field of developing computers and robots that are capable of behaving in ways that both mimic and go beyond human capabilities. AI-enabled programs can analyze and contextualize data to provide information or automatically trigger actions without human interference.

What Is Machine Learning?

Machine learning is a pathway to artificial intelligence. This subcategory of AI uses algorithms to automatically learn insights and recognize patterns from data, applying that learning to make increasingly better decisions.

By studying and experimenting with machine learning, programmers test the limits of how much they can improve the perception, cognition, and action of a computer system.

Deep learning, an advanced method of machine learning, goes a step further. Deep learning models use large neural networks — networks that function like a human brain to logically analyze data — to learn complex patterns and make predictions independent of human input.

How Companies Use AI and Machine Learning

To be successful in nearly any industry, organizations must be able to transform their data into actionable insight. Artificial Intelligence and machine learning give organizations the advantage of automating a variety of manual processes involving data and decision making. Some expressions including basic numbers like squares of numbers e.g 23^2 and base value of numbers like $H4C_{16}$ can be processed.

By incorporating AI and machine learning into their systems and strategic plans, leaders can understand and act on data-driven insights with greater speed and efficiency. The table below shows the company's per country that have implemented AI and machine language and the expected growth rate in five years time.

Country	NO. of AI machines	% growth	Increment per year
Kenya	50	5%	
Uganda	45	4.5%	
Tanzania	48	3%	
Zimbabwe	30	3%	
somalia	25	2%	

a) Using a word processor application, create the above document as it appears and save it as **KASU 1 exam** **13 marks**

b) Insert the AutoShape as it appears **2 marks**

c) Spell check your document 1 mark

d) Copy the above document into a new word document and save it as **Kasu Final exam** **3 marks**

e) Format all the titles in the document as follows:

i. Font type Aerial **1 mark**

ii. Font size 14.5 **1 mark**

iii. Font colour Black, text 1 **1 mark**

iv. Double underline **1 mark**

v. Bold italic **1 mark**

vi. Character spacing Expanded 150% **2 marks**

f) .Insert a dropped drop cap to 2 lines in the first paragraph starting with the word "artificial intelligence" and in margin drop cap to 2 lines in the second paragraph starting with the word "machine learning" **2 marks**

g) Find the abbreviation AI and replace it with artificial intelligence **2 marks**

h) Insert two columns in the 2nd last paragraph starting with "to be successful" with a line in between them **2 marks**

i) Format the titles in the table as follows:

i. Centre align all the titles **1 mark**

ii. Change the text direction of the titles on the table to 90^0 **1 mark**

iii. Double strike through **1 mark**

iv. Bold **1 mark**

j) Enter a formula to get the yearly increment for Kenya **2 marks**

k) Enter a formula to calculate the total NO. of AI machines in the five countries above **2 marks**

l) Insert a row above row one, merge all the cells and enter an appropriate title for the table **3 marks**

m) Insert the header of your document as © **your name** and footer as your **class and admission number** **2 marks**

n) Insert a caption with the title Artificial intelligence in East Africa **2 marks**

o) Print KASU1 exam and Kasu Final exam **2 mark**

QUESTION TWO

The table below shows a soccer league at the end of the season. The league comprises of 15 teams and each played 29 matches to close the season. Using a spread sheet program, represent the data and answer the questions below:

TEAM	COUNTY	MATCHES PLAYED	MATCHES WON	MATCHES DRAWN	MATCHES LOST	POINTS	TEAM POSITION	TEAM AWARDS
SHIRA FC	NORTH	29	10	16				
SATIMA FC	SOUTH	29	6	20				
NANGA FC	EAST	29	17	5				
LOGAN FC	NORTH	29	5	15				
KILIMANJARO	EAST	29	10	11				
KILIMAMBOO	WEST	29	20	2				
KARISIMBI	WEST	29	4	19				
KAMET UNITED	WEST	29	8	20				
GESSI	SOUTH	29	12	7				
FUJI FC	SOUTH	29	14	9				
EVEREST AC	EAST	29	11	7				
EMIN FC	EAST	29	8	3				
ELGON	EAST	29	28	1				
BROAD PEAK	WEST	29	22	6				
ATLAS UNITED	WEST	29	15	9				

a. Create a workbook called ***LEAGUE_RESULTS*** (1 Mark)

b. Using a customised ***INPUT FORM***, enter the following data into a worksheet and format it exactly as it appears. (10 Marks)

c. Set data validation criteria to ensure that matches won, drawn or lost do not exceed 29. A message ***"INCORRECT!"*** should be displayed in case the validation rule is violated. (4 Marks)

d. d. Rename the worksheet as ***LeagueTable*** **(2 Marks)**

e. Given that the total number of games played by each team in the season is 29, determine the number of games lost by each team. **(2 Marks)**

f. f. Calculate the points obtained by each team during the season given that: - (3 Marks)

Results	Points
Win	3
Draw	1
Loss	0

g. Determine each team's position in the league given that the team with the highest number of points becomes the first position in the league. (4 Marks)

h. Determine the number of teams that garnered above 55 points in the league. Label the cell appropriately. **(3 Marks)**

i. Given that teams get cash awards based on their positions according to the table below. Apply an appropriate formula to determine the team awards. (4 Marks)

Team Position	Team Award
1	$ 1,000,000
2	$ 500,000
3	$ 250,000
4	$ 125,000
Others	$ 0

j. Sort the data in ascending order by ***Team Position.*** **(1 Mark)**

k. Copy the worksheet ***LeagueTable*** to a new worksheet and rename it as ***CountyTeams*** **(1 Mark)**

l. Using S*ubTotals* function in ***CountyTeams*** worksheet, determine the Average Points of all the teams in each county **(5 Marks)**

m. Using worksheet ***LeagueTable*** plot a column graph on its own worksheet renamed as ***LeagueAnalysis*** showing the TeamName and TeamPoints only. **(7 Marks)**

n. Print the following: **(3 Marks)**

a. Formulas only in ***LeagueTable*** worksheet

b. ***CountyTeams*** worksheet

c. ***LeagueAnalysis*** worksheet

KCSE 2024 FINAL PREDICTION

EXPECTED EXAM 5

451/1 **Computer Studies** Paper 1

Time: 2½ Hours

(THEORY)

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)**

a)……**(b)**……

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

a)……**(b)**……

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

a)……**(b)**……

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”

PSEUDO CODE

(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)**

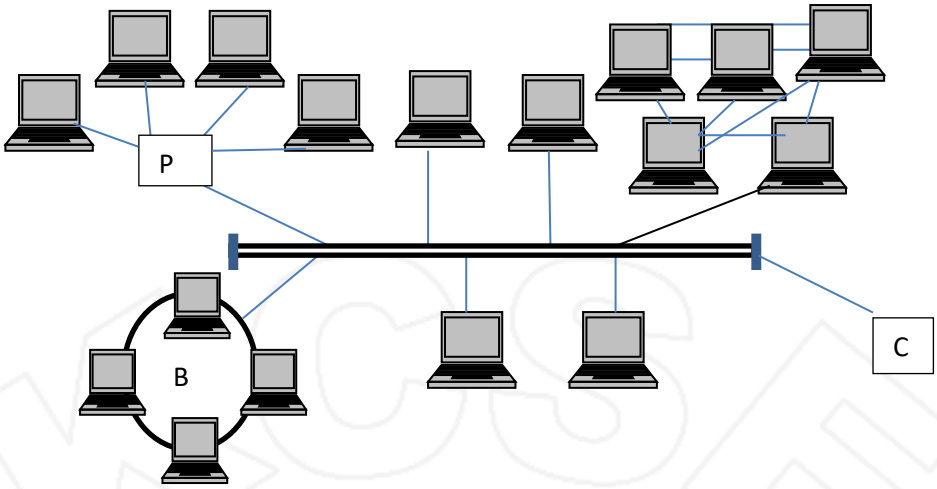
b. Give THREE reasons why a manager may prefer to teleconference during meetings. **(3 marks)**

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 2024 FINAL PREDICTION

EXPECTED EXAM 5

451/2 Computer Studies Paper 2

Time: 2½ Hours

(PRACTICAL)

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, 2024.

<<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 mrks)

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 FINAL PREDICTION

EXPECTED EXAM 6

451/1

COMPUTER STUDIES

PAPER 1 (THEORY)

TIME: 2½ HOURS

NAME……

SCHOOL…… **SIGN**……

INDEX NO…… **ADM NO**……

(Kenya Certificate of Secondary Education)

Instructions to Candidates

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

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

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

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

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

FOR EXAMINER'S USE ONLY

Section	Questions	Candidate's score
A	1-15	
B	16	
	TOTAL SCORE	

For Marking Schemes Contact 0746 222 000 / 0742 999 000

SECTION A: (40 MARKS)

Answer ALL questions in this section

1. Name any **two** computing devices developed during pre-electronic age. **(2marks)**

2. Several items of data are input to a computer using direct data entry methods. Write down the most appropriate input device to input each item of data.

a) Data written in special ink at the bottom of bank cheques. **(1mark)**

b) Information on the label of a supermarket product. **(1mark)**

c) Shaded in boxes on a student's examination answer sheet. **(1mark)**

d) Debit card details input at an **ATM.** **(1mark)**

3. Differentiate between a monitor and a printer in terms of information output. **(2marks)**

4. Kilimambogo has decided to create a new file using an application program. He added content in the file. Identify the type of storage device that he was using while creating the file. **(1mark)**

5. Kilimambogo decided to save the file after adding content. Identify the type of storage device he used. **(1mark)**

6. Describe **three** types of computer buses **(3marks)**

7. Describe the following concepts as used in applications.

- Automatic recalculation. **(2marks)**
- What if analysis. **(2marks)**

8. Password is a secret code for protecting systems against unauthorized access. State **three** features of a password. **(3marks)**

9. Explain the following terminologies used in an e-mail software.

(i) CC **(2marks)**

(ii) BCC **(2marks)**

10. Identify the data processing modes that are used in performing the following activities:

(i) Processing examination marks for students in a school. **(1mark)**

(ii) Booking a bus ticket using computing device and choosing a specific seat. **(1mark)**

(iii) Buying of data bundles using a software that provides the user with immediate response to enable the user to decide and make a selection for the next input**.** **(1mark)**

11. Name **three** types of non-printing guides in DTP. **(3marks)**

12. State **two** advantages of USB ports over COM ports. **(2marks)**

13. A supermarket decided to computerize their system. State **three** benefits that the supermarket would realize by doing this. **(3marks)**

14. Kimani wanted to buy an application software, he was advised to buy an integrated package. What is meant by the term integrated software. **(2marks)**

15. Explain **three** benefits that Kimani would experience by using an integrated software other than the single package. **(3marks)**

SECTION B: (60 MARKS)

Answer Question 16 and any other three questions from this section

16. (a) Explain the term structured programming as used in program development. **(2marks)**

(b) Name the stage of program development in which: **(4marks)**

(i). A flowchart would be drawn.

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

(iii). User guide would be written.

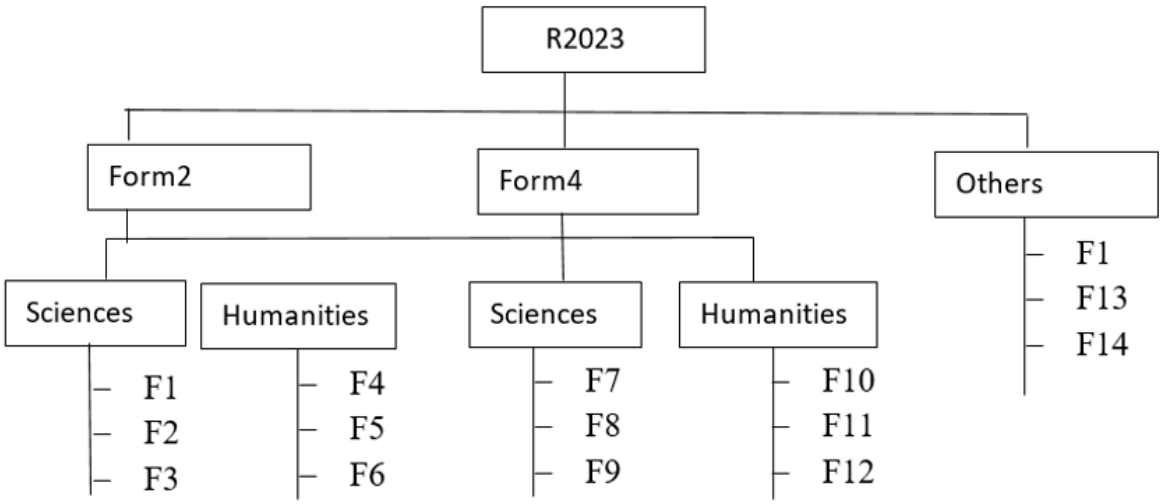
(iv). The requirement specification would be written.

(c) State **two** function of an assembler. **(2marks)**

(d) To qualify to play in football tournament, a student must be aged between 13 and 18, the system automatically checks a player's age once their names and date of birth have been provided. 11 participants were evaluated and their qualification status displayed alongside their name and age. Draw a flowchart that would be used to create the program. **(7 marks)**

17. a) . State **three** ways in which an operating system performs error handling in a computer system. **(3marks)**

b). An operating system organizes files in directories as shown in the chart below. Study it and answer the questions that follow.



(i) Write the name of this file structure? **(1mark)**

(ii) Explain what would happen if an attempt is made to delete **Form4** while **F10** in **Humanities** is opened. **(2marks)**

(iii) Write the path of the **F6**. **(2marks)**

(c) Describe **three** activities that are performed in the maintenance phase during system development. **(6 marks)**

(d) State **one** role of an information system analyst. **(1mark)**

18. (a) What is meant by the term data communication? **(1mark)**

(b) Describe **three** data communication elements **(3marks)**

(c) State the meanings of the following network and internet terms: **(5marks)**

i.Protocol

ii. Client

iii. Server

iv. Home page

v.DTE

(c) With aid of a diagram, describe the star network topology **(6marks)**

19 (a) Define each of the following computer terminologies **(2marks)**

a. Nibble

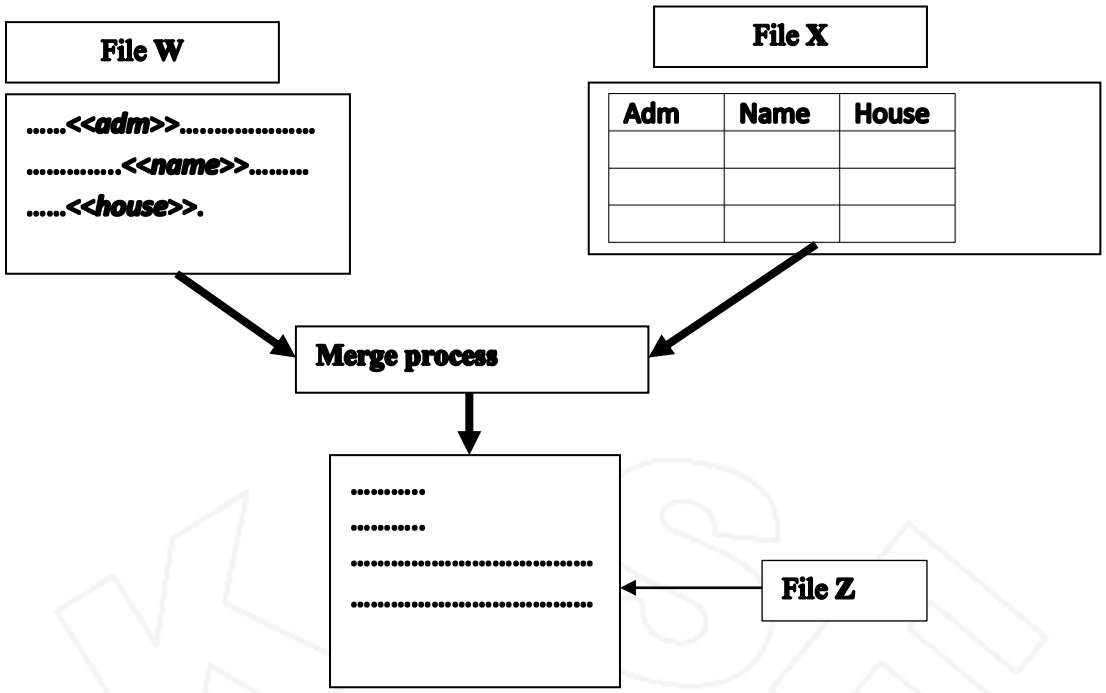
b. Byte

(b) State **three** ways of reducing Repetitive Strain Injuries when using computers. **(3marks)**

(c) Using twos compliment, perform the following binary arithmetic leaving your answer in decimal notation.

$1101_2 - 100101_2$ **(6 marks)**

(d) The diagram below shows how mail merging is done in word processing. Use it to answer the questions below.



Identify the files labeled: **(3marks)**

(i) W ……

(ii) X ……..

(iii) Z ……..

(e) Name the terminology used to refer to items enclosed in << >> symbols in file **W**. **(1mark)**

20. (a) Explain **three** components of an Expert System. **(6marks)**

(b) The following is an extract from a database obtained from a National organization. Use the table to answer questions which follow:

S/NO	EMPLOYMENT ID	NAME	AGE	DEPARTMENT	SALARY(SH)	STATUS
001	EMP01	Lucy	40	Secretary	40,000	Married
002	EMP02	Agnes	45	Cook	20,000	Single
003	EMP03	Peter	30	Messenger	15,000	Married
004	EMP04	Joel	35	Account	50,000	Married
005	EMP05	Abdi	20	Sales	45,000	Single
006	EMP06	Baraka	25	Security	10,000	Single

(i.) Which field could best fit to be a primary key? **(1mark)**

(ii) Explain your answer in (i). **(2marks)**

(iii)Describe how they would extract all the details of those who are 30 years and above and are married. **(3 marks)**

(c) State **three** area where virtual reality can be applied. **(3marks)**

KCSE 2024 FINAL PREDICTION

EXPECTED EXAM 6

451/2

COMPUTER STUDIES

PAPER 2 (PRACTICAL)

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

	A	B	C	D	E	F	G
1	**KIBOS HOLDINGS COMPANY LIMITED**						
2	**P.O BOX 23625 BOMET**						
3		**First quarter**			**Second quarter**		
4		**January**	**February**	**March**	**April**	**May**	**June**
5	Production Cost	15642	14687	18741	19457	15412	15441
6	Transportation	1564	1469	1874	1946	1541	1544
7	Warehousing	1125	1056	1347	1398	1107	1109
8	Promotion	2564	2407	3071	3188	2525	2530
9	Salary	4525	4248	5420	5626	4456	4465

b)i) Copy the details of Kibos holding company limited to sheet 2 of your worksheet. **(2marks)**

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

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

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

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

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

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

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

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

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

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

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

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

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

Fig 1

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

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

ii) Data for included fields is as follows;

Profession

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

Deductions

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

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

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

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

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

e)Generate a columnar report based on **LIST 2** with the following fields; Emp no, Name, Department and Net Pay. Sum up the Net Pay for all employees in the report. Save your report as **REPORT.** **(6marks)**

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

KCSE 2024 FINAL PREDICTION

EXPECTED EXAM 7

451/1

COMPUTER STUDIES

PAPER 1 (THEORY)

TIME: 2½ HOURS

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

(Kenya Certificate of Secondary Education)

INSTRUCTIONS TO CANDIDATES

- *Write your Name, Admission number in spaces provided above.*
- *This paper consists of **TWO** sections.*
- *Answer **ALL** 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 this question paper.*

For Examiner's Use Only

Questions	Maximum Score	Actual Score
1-15	40	
16	15	
17	15	
18	15	
19	15	
20	15	
TOTAL		

SECTION A: 40 MARKS

Answer all the questions in this Section.

1. State two reasons for the increased use of Laptop computers in modern workplaces **(2marks)**
2. What precautions would you take in the computer laboratory incase users are complaining of overheating and suffocation. **(2marks)**
3. Convert the decimal number 15.373_{10} to its binary number system equivalent. **(3marks)**
4. With an aid of a diagram describe the difference between Repeat Until and While… Do **(3marks)**
5. State three circumstances which may force an individual to acquire an impact printer instead of non-impact printer. **(3marks)**
6. Sam prepared a five-page brochure of Maseno School using Ms-publisher. He wanted to insert a school badge in each page of the publication. State two methods he need to apply to execute this task. **(2marks)**
7. State the difference between ones complement and twos complement **(2marks)**
8. Explain the impact of Information Technology on organization in each of the following areas. **(2 marks)**

(a) Competition.

(b) Pace of growth.

9. State four benefits of cloud storage in computing. **(4marks)**
10. Describe the functions of the following disk management operations.

(a) Defragmentation **(1mark)**

(b) Partitioning **(1mark)**

11. Describe four ways through which an organization can minimize threats to it data integrity. **(4marks)**
12. Study the following three sections of code and name accordingly **(3marks)**

10101010110	**MOV AL, 10**	**<OL> Chemistry**
01010101010	**MOV DL, 25**	** Biology**
01000010101	**MUL DL**	** Physics </OL>**
10100010110		
(a)	**(b)**	**(c)**

13. Identify how the operating system will label the following drives in case a computer has one floppy drive, one hard disk partition into two and a DVD. **(3marks)**
14. Five students Jane, Beryl, Baroness, Linda, and Jael scored the following marks in mathematics: 45, 76, 34, 65 and 45. The marks were recorded in cell C3 to C7. Write down the most appropriate function that can be used to give those positions so that they can be awarded in descending order. **(3marks)**
15. Match the following statements with repeater, router or a bridge. **(2 marks)**

	STATEMENT	DEVICE
(a)	Operates at data link layer	
(b)	Determine the best path for data to follow	
(c)	Regenerates signals	
(d)	Forwards everything which it doesn't recognize	

SECTION B: 60 MARKS

ANSWER QUESTION NUMBER 16 ANY OTHER THREE QUESTIONS FROM THIS SECTION

16.

(i) Define the following terms as used in programming. **(3marks)**

(b) Machine dependent

(c) Bug

(d) Syntax

(ii) Give two reasons to justify why most programmers prefer using compilers instead of interpreters. (**2marks)**

(iii) Describe two limitations of machine language. **(2marks)**

(iv) Study the pseudo code below and design its equivalent flowchart (**8marks)**

```
Start
 Count=1
 For count =1 to 5 Do
Get Value 1 and Value 2
 If Value 1 > Value2 Then
 Maximum =Value1
 Else
 Maximum =Value2
 Endif
 Display Maximum
 Count=Count+1
Stop
```

17.

(i) The five-bit number 00101 is used to represent decimal number 5, show three methods of coding for negative 5. (**3marks)**

(ii) Convert the binary number $10101111010110111000 01_2$ into its

(a) Octal equivalent (**2marks)**

(b) Hexadecimal (**2marks)**

(iii) Convert 10101.010101_2 to decimal (**3marks)**

(iv) Use 8-bit twos to subtract 35_{10} from 17_{10} **(3marks)**

(v) Perform the following calculation **(2marks)**

$110001_2+1111_2-11111_2$

18.

(i) Define the term desktop publishing. **(2marks)**

(ii) List three nonprinting guides used in Desktop publishing **(3marks)**

(iii) Explain the following features as used in DTP when manipulating graphical objects.

(a) Fill (**1mark)**

(b) Stroke **(1mark)**

(vi) Describe any three types of action queries. (**3marks)**

(iv) Describe the function of the following features of a query grid.

(a) Criteria **(1mark)**

(b) Show **(1mark)**

(v) Mention three functions of database management software. **(3marks)**

19.

(i) State three causes of system entropy. (**3marks)**

(ii) Describe three main ways of maintaining a computer-based system. **(3marks)**

(iii) State three advantages of using pilot changeover strategy in system development **(3marks)**

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

(a) Identifying shortcomings of the system **(1mark)**

(b) Prepare training manuals **(1mark)**

(c) Calculating the cost benefit analysis **(1mark)**

(v) State three outcomes that may result from using incorrect requirement specifications during system development. **(3marks)**

20.

(a) Define the following terms.

(i) Downloading **(1mark)**

(ii) Uploading **(1mark)**

(iii) Blog **(1mark)**

(b) Briefly describe how internet platform have revolutionized business operations in the 21st century. (**3marks)**

(c) Mention three emerging issues that make many people have a negative perception about internet. **(3marks)**

(d) Explain the following terms as used in data processing.

(i) Multiprocessing **(1mark)**

(ii) Batch processing **(1mark)**

(e) Explain the following types of errors.

(i) Overflow error (**1mark)**

(ii) Truncation error **(1mark)**

(f) Mention two application areas of real processing **(2mark)**

KCSE 2024 FINAL PREDICTION

EXPECTED EXAM 7

451/2

COMPUTER STUDIES

PAPER 2

TIME: 2½ HOURS

SCHOOL…… SIGN……

(Kenya Certificate of Secondary Education)

CONFIDENTIAL INSTRUCTIONS

The information contained in this document is to enable the headteacher of the school and the teacher in charge of Computer Studies (451/2) to make adequate preparation for this year's examination.

Each school offering Computer Studies should ensure that:

1. Each candidate is provided with a computer which has:
   - a new blank CD-RW (i.e. compact disk re-writable)
   - a DVD writing drive
   - The following software installed:
   a)DTP - MS publisher or PageMaker
   b) Word processor - MS Word
   c)Spreadsheet - MS Excel
   d) Database - MS Access
2. Enough computers and fast printers. Two shifts of candidates are recommended.
3. Provide IBM compatible computers
4. Computer teacher should disable the network and computer related examination in the beginning of each session.

KCSE 2024 FINAL PREDICTION

EXPECTED EXAM 7

451/2

COMPUTER STUDIES

PAPER 2 (PRACTICAL)

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. The table in Figure 1 below was captured from a Nia Safi Investments spreadsheet.

	A	B	C	D	E	F
1			Nia Safi Investments			
2			*Overtime calculations for the month of June*			
3	***Date***	***Name***	***Hours Worked***	***Day of Week***	***Rate***	***Amount***
4	01-Jun-2023	Albert	**4**	Thursday		
5	03-Jun-2023	Albert	**3**	Saturday		
6	05-Jun-2023	Albert	**1**	Monday		
7	07-Jun-2023	Albert	**4**	Wednesday		
8	09-Jun-2023	Bernard	**4**	Friday		
9	11-Jun-2023	Caroline	**5**	Sunday		
10	13-Jun-2023	Albert	**2**	Tuesday		
11	15-Jun-2023	Albert	**4**	Thursday		
12	17-Jun-2023	Carl	**3**	Saturday		
13	19-Jun-2023	Lewis	**4**	Monday		
14	21-Jun-2023	Lewis	**2**	Wednesday		
15	23-Jun-2023	Bernard	**2**	Friday		
16	25-Jun-2023	Bernard	**4**	Sunday		
17	27-Jun-2023	Caroline	**3**	Tuesday		
18	29-Jun-2023	Bernard	**1**	Thursday		
19	01-Jul-2023	Caroline	**4**	Saturday		
20	03-Jul-2023	Bernard	**1**	Monday		

(a) In a new Spreadsheet, enter the information exactly as it appears and save your work as **NSI-Task1**. **(11 marks)**

(b) Enter the table in **Figure 2** below from cell **A23** in the same spreadsheet. **(3 marks)**

Rates Of Pay	
Day of the Week	***Rate (Ksh)***
Saturday	**150.00**
Sunday	**200.00**
Any other Day	**100.00**

(c) Using the information in **Figure 2** and appropriate cell addresses, type a formula in **E4** which you will copy downwards to obtain all the rates of pay in respective cells. **(6 marks)**

(d) Copy the formula in part (c) above to obtain all rates of pay. **(2 marks)**

(e) Using an appropriate Function, work out the Amounts considering that *Amount = Hours Worked × Rate*. **(4 marks)**

(f) Rename the used spreadsheet as '*Calculations*'. **(1 mark)**

(g) Save the work done so far as **NSI-Task2**. **(1 mark)**

(h) Create a duplicate copy of Calculations sheet, hence rename the copy as '*Subtotals'*. **(2 marks)**

(i) Using the data Subtotaling feature, work out the totals paid to every worker within the period. **(3 marks)**

(j) Create another copy of Calculations Sheet as rename it as '*Attendance'*. **(2 marks)**

(k) Replace the information in table from A23 to appear as follows: **(2 marks)**

Attendance Register	
Employee	***Times Attended***
Albert	
Bernard	
Caroline	
Carl	
Lewis	

(l) Using an appropriate function count the ***Times Attended*** by each of the employees into the table in Figure 3 above. **(3 marks)**

(m) Use a 3-D pie chart to represent the data in Figure 3 above. Apply the following settings:**(5 mk**

- Title: *Times Attended Chart*
- Legend: *Placed at the bottom*
- Labels: *Both Percentages & Values*
- Location: *As a New Sheet named* **Pie-Chart**.

(n) Save the final work as **NSI-Task3**. **(1 mark)**

(o) In **NSI-Task3,** ensure that every worksheet has a header bearing your name, admission number and class. **(2 marks)**

(p) From **NSI-Task3**, print the **Calculations**, **Attendance**, **Subtotals** and **Pie-Chart (2 marks)**

2. (a) Use a DTP software to design the following publication as it is with the following settings:

(i) paper size = **A4**

(ii) orientation = **Landscape**

(iii) page margins = **0.25** inches all around

(i) Guides: Column 1 Width = 5.2"
Space between Columns = 0.75"
Column 2 Width = 5.2"

(ii) File name = **ExcellenceBook** **(6 marks)**

(b) Design the publication as it appears on the following page on the page you have created and fit all the items within the page. **(38 marks)**

(c) Insert your name and admission number as header, then your class and page number as footer. **(4 marks)**

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

Top Achievers
Volume One
About This Book
This book guides you on gaining excellent skills on the following practical areas:
Word Processing
Spreadsheet Applications
Desktop Publishing
Database Management
Ksh. 250
EXCELLENCE COMPUTER STUDIES
EXCELLENCE COMPUTER STUDIES
Learn with the experts
BOOK ONE

KCSE 2024 FINAL PREDICTION

EXPECTED EXAM 8

451/1

COMPUTER STUDIES

PAPER 1 (THEORY)

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	

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

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

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

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

5. Using examples, distinguished between:

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

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

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

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

(i) Authenticity

(ii) Portability

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

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

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

i) Tables

ii) Forms

iii) Query

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

a. Syntax

b. Semantic

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

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

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

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

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

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

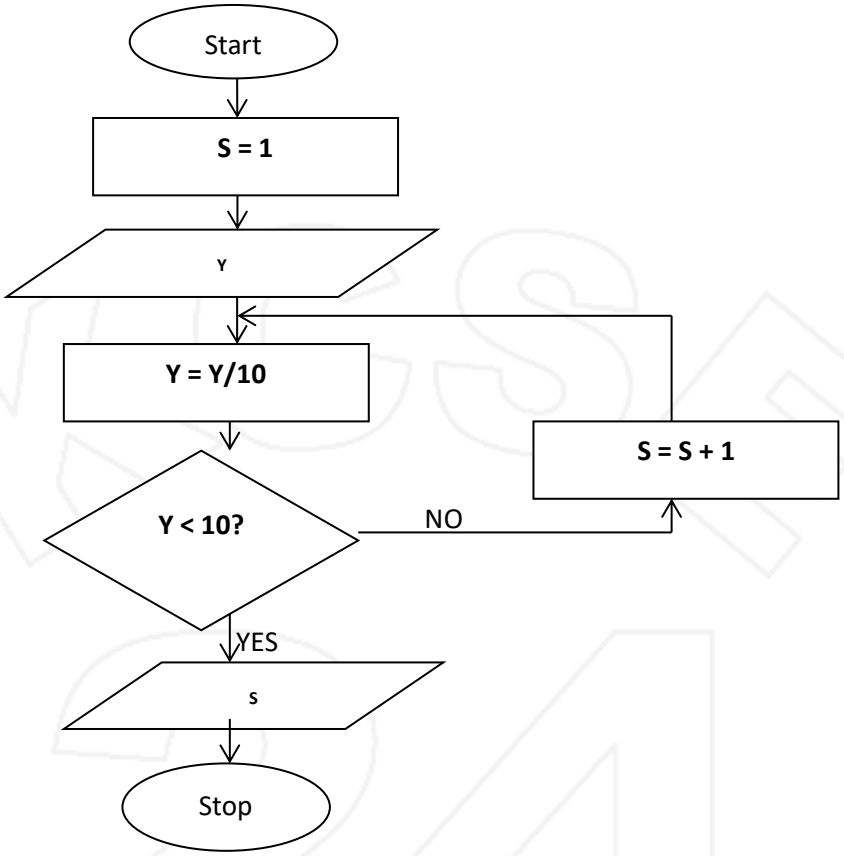
SECTION B

Answer question 16 and any other three questions in this section

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

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

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



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

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

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

(iii) – 800 **(2 marks)**

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

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

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

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

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

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

Whole numbers

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

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

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

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

i) F.T.P

ii) H.T.T.P

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

KCSE 2024 FINAL PREDICTION

EXPECTED EXAM 8

451/2

COMPUTER STUDIES

PAPER 2 (PRACTICAL)

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 Admission number on the compact disks*
- *Write the name and version of the software used for each question attempted in the answer sheet.*
- *Passwords should not be used while saving in the 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 answer sheets provided.*
- *Hand in all the printouts and the compact disks.*

For Marking Schemes Contact 0746 222 000 / 0742 999 000

COMPUTER PAPER TWO

Question 1

1. Create a folder on the desktop called MAVUNO COMPANY LIMITED. **(50 marks)**

(i) Using spreads sheet program enter the following data and Save the file as *mavuno payroll* inside the folder created above**.(10 marks)**

(ii) Insert printable borders**(2 marks)**

(iii) Arrange the department from A to Z **(2 marks)**

(iv) Rename sheet one as ***original*.(1 mark)**

	A	B	C	D	E	F	G	H	I	J	K	L
1	MAVUNO COMPANY LIMITED 2022 PAYROLL											
2	PNO	NAME	GENDER	DEPARTMENT	HOURS WORKED	HOURLY RATE	BASIC PAY	GROSS PAY	TAX DEDUCTIONS	NSSF CONTRIBUTIONS	ALLOWANCES	NET PAY
3	A01	KELLY	M	MARKETTING	12	350						
4	A02	ERICK	M	ACCOUNTING	16	450						
5	A03	SILVER	F	CUTOMER CARE	5	250						
6	A04	WESLEY	M	CUSTOMER CAR	22	250						
7	A05	MONICA	F	MARKETTING	19	350						
8	A06	JUPITER	F	SALES	26	300						
9	A07	BETTY	F	ACCOUNTING	10	450						
10	A08	MARY	F	SALES	7	300						
11	A09	OLSON	M	SALES	13	300						
12	A10	JANE	F	MARKETTING	12	350						
13												
14												

(v) Copy original sheet to sheet two and rename it as payroll, calculate the following ;(12 marks)

(a) Basic pay
(b) Gross pay
(c) Tax deductions
(d) Nssf contributions
(e) Allowances
(f) Net pay

Nb: Use the formula below

BASIC PAY =HOURS WORKED *HOURLY RATE

ALLOWANCE ARE ALLOCATED AS 10% 0F BASIC PAY

Gross pay =BASIC PAY + ALLOWANCE

TAX DEDUCTION is calculates as 20% of the GROSS PAY

NET PAY=GROSS PAY-DEDUCTIONS

(vi) Copy names and basic pay to sheet three rename sheet three as **chart.(2 marks)**

a) Create column chart using employee's names, basic pay and allowances.(3 marks)

b) Set the chart title as payroll at the top 2022(2 marks)

c) Insert legend at the bottom(1 mark)

d) Add data labels at the top(1 mark)

e) Format chart border as; solid line, solid color-red, transparency-50%.(3 marks)

(vii) Copy *pno, name,gender,department and netpay* from payroll sheet to calculate the following ; (2 marks)

a) Calculate the subtotals of each department and grand total, save the sheet as subtotals (4 marks)

b) Freeze the header (1 mark)

(viii) Print the following; (4 marks)

(a) Original worksheet

(b) Payroll worksheet

(c) Chart worksheet

(d) Subtotals worksheet

Basic Pay = Hours Worked * Hourly Rate.

(ii). Allowances are allocated at 10% of the Basic Pay.

(iii). Gross Pay = Basic Pay + Allowances.

(iv). Tax Deduction is calculated at 20% of the Gross Pay.

(v). Net Pay = Gross Pay – Tax Deductions.

Basic Pay = Hours Worked * Hourly Rate.

(ii). Allowances are allocated at 10% of the Basic Pay.

(iii). Gross Pay = Basic Pay + Allowances.

(iv). Tax Deduction is calculated at 20% of the Gross Pay.

(v). Net Pay = Gross Pay – Tax Deductions

Question 2

Design a publication to appear exactly as shown in the next page using the following instructions.

(20marks)

a) (i) Launch the DPT package and set measurements to centimeters and the margins 2cm all round

(ii) Paper size A4 portrait.

b) Save your work as "Modern computers" **(2marks)**

c) The heading "*Introduction to computers The Basics"* to have the following styles. **(5marks)**

- Centered across the page
- Font face
- Font size: 18
- Background Texture: Granite
- Format the drop cap in the first line as it appears

d) The heading "Hardware" in the publication to have the styles. **(5marks)**

- Font face: Arial Narrow
- Font size: 16
- Text weight: Bold
- Character spacing: 180%
- Alignment: Centered

e) The text under the heading "Hardware" to be in two columns and having the following styles.

(3marks)

➢ Font size: 12

➢ Dashed outline on the first column

➢ First character of the first column to be dropped by 4 lines as shown.

f) Insert the banner bearing the text auxiliary as it appears. **(3marks)**

g) - Enter the text below the banner in three columns as shown **(4marks)**

- Insert lines between the three columns **(3marks)**
- Type and format the text below the three columns exactly as it appears **(3marks)**

h) Print the publication.

Introduction to Computers The Basics

Many people believe that knowing how to use a computer, is one of the basic skills needed to succeed in the workplace. In order to use the computer it is necessary to understand how the computer works.

Hardware

Computer hardware is made up of the equipment used to make up you computer unit. These parts include your monitor, central processing unit (CPU), keyboard, mouse, printer, and modem.

The computer is an electronic machine that performs the following four general operations:

- Input
- Storage
- Processing
- Output.

Input

The input hardware allows you to enter data into the computer. The primary devices used are the keyboard and mouse.

Processing

The central processing unit or (CPU) is the "brain" of your computer. It contains the electronic circuits that cause the computer to follow instructions from ROM (read only memory) or from a program in RAM (random access memory).

Output

Output devices such as a monitor or printer make information you input available for you to view or use.

Storage

Auxiliary storage devices, also called secondary storage devices, are used to store instructions and data when they are not being used in mem-

AUXILLIARY

Floppy Disks - A floppy disk is a circular piece of oxide-coated plastic

To read data stored one floppy disk or to store data on a floppy disk, you insert the floppy disk in a disk drive. If the disk is unused, you must format or initialize it before your computer will allow you to store data on it. Formatting organizes the tracks around the disk into pie like slices called sectors which make it possible for your computer to save and retrieve information. The density of the bits on the track and

Floppy disks are identified as being double density or high density

KCSE 2024 FINAL PREDICTION

EXPECTED EXAM 9

451/1

COMPUTER STUDIES

PAPER 1 (THEORY)

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 (40 marks)

Answer all the questions in this section

1. State **two** major functions of UPS in computer laboratory **(2 mark)**

2. State Two effects of the following: (2 mark)

a. Low hanging bulbs in a computer lab.

b. Having taps and sinks in the computer lab.

3. List two examples of Special keys on the computer keyboard**.** **(2 marks)**

4. For each of the following computer generations, identify the processors used to control internal computer operation **(2 marks)**

i. First Generation _____

ii. Second generation _____

iii. Third generation_____

iv. Fourth generation_____

5. a) Explain the term *plug and play* as used in **computing** **(2 marks)**

b) State two tasks performed at the analysis stage during system development **(2 marks)**

6. Study the diagram below.



a) State the device used to read such document **(1 mark)**

b) Give reason the device mentioned in (a) above is **suitable** **(1 mark)**

7. A computer specification has the following details

- Modem
- Dual core
- 1.44 MB floppy disk drive
- 20 GB hard disk
- Full multimedia
- Pre-installed operating system

a) What is meant by Dual core? **(1 mark)**

b) What is the use of a modem **(1 mark)**

8. Define the following terms:

i. Resolution **(1 mark)**

ii. Pixel **(1 mark)**

iii. Resolution **(1 mark)**

9. a) Explain the functions of the components of the task bar **(3 marks)**

b) Distinguish between software configuration and software **installation** **(2 marks)**

10. a) A student typed a letter in a word processor and the last line of the letter flowed to the second page. State three ways in which the student could have adjusted the letter to fit on one page without changing the paper size **(3 marks)**

b) List four data types used in electronic spreadsheets **(2 marks)**

13. a) State the elements of a computer file **(3 marks)**

b) Differentiate between soft system and hard system as used in system development **(2 marks)**

14. State two ways in which computer technology is used by the police in detecting crimes **(2 marks)**

15. Identify the personnel responsible for each of the following**:** **(4 marks)**

a. Ensuring up to date maintenance of ICT records _____

b. Identifying and fixing security loopholes _____

c. Managing the learning and examination processes _____

d. Testing and debugging programs _____

Section B (60 marks)

Answer question 16 and any other three questions from this section

16.a) AVS car rental firm leases its cars for Kshs. 2500 per day. The manager gives a discount based on the number of days that the car is rented. If the rental period is greater than or equal to 7 days then a 25% discount is given. Write a pseudocode to accept a car number and the rental period, and calculate the total amount earned by the company when a car is leased. **(5marks)**

i) Draw a flowchart for the program. **(5marks)**

(c) Identify three control structures used in program development. Giving examples in each **(3mks)**

(d) Define the following terms as used in programming **(2marks)**

i) Assembler

ii) Compiler

17. a. *Using **BCD** representation, find the binary equivalent of* 5_{10}. ***(2mks)***

b) Convert each of the following number system

i) 0.78125_{10} binary **(2mks)**

ii) $3A9_{16}$ to octal **(2mks)**

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

$1010.11_2 + 111.10_2 - 101.11_2$

d) Using one's complement, perform the following binary arithmetic leaving the answer in decimal notation. **(6mks)**

$47_{10} - 25_{10}$

18. (a) State three communication services offered through the internet **(3 marks)**

(b) List any THREE items that may be referred to as data terminal equipments in a network. **(3 marks)**

(c) Briefly explain the following terms as used in networking. **4 marks)**

(i) Remote communication

(ii) Distributed processing

(d) State THREE advantages and TWO disadvantages of mesh network topology.**(5 marks)**

Advantages

Disadvantages

19. a) an expert system is being developed to help engineers diagnose faults in aero engines. Explain three components of such an expert system **(6marks)**

b) Another method used to identify and rectify faults is to train engineers using virtual reality systems.

i) Define the term virtual reality **(2 marks)**

ii) Identify three equipment used in virtual reality (3 marks)

b) Explain two ways in which the operating is used in memory management **(4 marks)**

20. a) The owner of a sports club has recently had a new computerized stock control system installed. He employed a systems analyst to research the existing system and then install the new system.

(a) Tick the relevant stage of the systems analysis and design (systems life cycle) for each of the following activities. **(4mks)**

Activity	Analysis ✓	Design ✓	Evaluation ✓
Interviewing the users of the new system			
Interviewing the users of the existing system			
Planning the validation routines			
Examining existing documents			

(b) Before the system was installed, the systems analyst had to decide on a method of implementation.

Name and describe **three** methods of implementation.

Name .....

Description .....

Name .....

Description.....

Name.....

Description .....

(c) When the system was implemented, the system analyst gave some documentation to the sports club owner.

Name **two** items found in the technical documentation of this system. **2mks**

(d) State **three** areas to be addressed during system implementation: **3mks**

KCSE 2024 FINAL PREDICTION

EXPECTED EXAM 9

451/2

COMPUTER STUDIES

PAPER 2

TIME: 2½ HOURS

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

(Kenya Certificate of Secondary Education)

INSTRUCTIONS TO CANDIDATES.

- *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 Admission number on the compact disks*
- *Write the name and version of the software used for each question attempted in the answer sheet.*
- *Passwords should not be used while saving in the 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 answer sheets provided.*
- *Hand in all the printouts and the compact disks.*

1. a) Chwele holding company limited contacted you to help them analyze their sales and expenses in the first two quarters of the year. The details used in calculating expenses incurred during the two quarters of the year are shown in the table below. Use a spreadsheet package to enter details, and save your work as Expenses 1. **(10 marks)**

	A	B	C	D	E	F	G
1	**CHWELE HOLDINGS COMPANY LIMITED**						
2	**P.O BOX 236 KITUI**						
3		**First Quarter**			**Second Quarter**		
4		**January**	**February**	**March**	**April**	**May**	**June**
5	Production cost	15642	14687	18741	19457	15412	15441
6	Transportation	1564	1469	1874	1946	1541	1544
7	Warehousing	1125	1056	1347	1398	1107	1109
8	Promotion	2564	2407	3071	3188	2525	2530
9	Salary	4525	4248	5420	5626	4456	4465

b)i)Copy the details of Chwele holding company limited to sheet 2 of your worksheet.**(2 marks)**

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

iii) Calculate the total for the other expenses. **(4 marks)**

c) i) Enter the label "Total Expenses" in cell A10. Calculate the total expenses for each month. **(4 marks)**

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

d) i) In cell H10, calculate the cumulative total expenses for the two quarters in cell H10.(4 marks)

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

iii) Type the label "Percentage Expenses in cell A11. Use absolute cell absolute cell reference to calculate the percentage of total expenses for the respective months. **(4 marks)**

iv) Write down the formulae used to get the percentage expenses for the month of May.**(2 mrks)**

v) Insert a line graph of the total expenses for the six months. Appropriately label your graph by adding legends and titles. **(8 marks)**

vi) Save your work as Expenses 2. **(2 marks)**

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

2. Chwele Training College offers three courses to students. A student sits for three exams every semester, each exam marked out of 100. The students must have been enrolled first. The following is sample data collected from the college database.

Courses

Course	Course description	Tuition fees
D –SECT	Secretarial Diploma	Kshs. 15,000
D – INT	Diploma in IT	Kshs 18,000
D - ACCT	Diploma in Accounting	Kshs 16,500

Student's enrollment

Students	St name	Sex	Date enrolled	Course Code
SECT -01	Margaret Kanini	Female	12/05/2011	D – SECT
INT -03	Alex Mwangang	Male	16/05/2011	**D – INT**
ACCT -04	Joseph Syengo	Male	18/05/2011	**D – ACCT**
SECT -06	Nthenya Muli	female	17/05/2011	**D-SECT**

Exams offered

Exam code	Ex name
01	**Opener**
02	**Midterm**
03	**end term**

Exam performance

Exam recor no	Student ID	Exam code	Semester	score
1	SECT -01	01	2	75
2	INT -03	02	2	80
3	ACCT -04	01	2	65
4	SECT -01	02	2	70
5	ACCT -04	02	2	60
6	INT -03	01	2	68
7	SECT-01	03	2	78
8	INT -03	03	2	74
9	ACCT-04	03	2	66

NB:-A course can be enrolled by many students and a student can do many exams. One exam can also be done by many students as shown in exam performance table.

Required

a) Create a database file called **Chwele College** and save it. **(2 marks)**

b) Create a table structure for each of the four tables, setting most appropriate field as the primary key and choosing the most appropriate data type for each field. **(12 marks)**

c) Relate the four tables as required to have one to many relationships. **(4 marks)**

d) Create a data entry form for each table. **(8 marks)**

e) Using the forms, populate the tables with the records. **(8 marks)**

f) Query the tables to show Stname, Course decsription, Exname,Exrecordno and score for all students who scored greater than 70. Save the query as high score. **(5 marks)**

g) Create a grouped report that displays every student's details and his or her exam performance as follows;
Student details – Stname, Student ID, Course description.
Exam performance – Exname, Score, Average score.
Save the report as performance report. **(5 marks)**

h) Print Exam performance table in landscape, high score query in portrait and performance report in portrait orientation. **(6 marks)**

KCSE 2024 FINAL PREDICTION

EXPECTED EXAM 10

451/1

COMPUTER STUDIES

PAPER 1 (THEORY)

TIME: 2½ HOURS

NAME……

SCHOOL…… SIGN……

INDEX NO…… ADM NO……

(Kenya Certificate of Secondary Education)

INSTRUCTIONS TO CANDIDATES

(f) Write your Name and Index/Adm Number in the spaces provided.
(g) This paper consists of **TWO** sections: **A** and **B**
(h) Answer **ALL** the questions in section **A**
(i) Answer question **16** and any other **THREE** questions from section **B**
(j) All answers should be written in the spaces provided in the question paper.
(k) **Candidates should answer the questions in English.**

For Examiners use only.

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

SECTON A: 40MKS

Answer **ALL** the questions in this section

1. Name four categories of input devices **(4marks)**

2. State any two data transmission impairments **(2marks)**

3. Explain the emerging trends in microcomputer technology in relation to size **(2marks)**

4. Name any two physical measures taken to protect a computer lab from unauthorized access. **(2 marks)**

5. Mention two things that are likely to cause strain- in the computer room **(2 marks)**

6. What are turnaround documents? **(1 mark)**

7. Name any two data capture techniques that make use of turnaround documents **(2 marks)**

8. State four functions of Read – Only Memory (ROM) **(4 marks)**

9. Lydiah 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 **(2 marks)**

10. Explain why documentation is necessary for any software package **(2 marks)**

11. A firm intends to purchase new software. List three items of documentation that should accompanythe software **(2 marks)**

12. Give three advantages of using GUI based operating system over a command line interface **(3marks)**

13. Distinguish between disk compressing and disk defragmenting **(2 marks)**

14. Describe TWO roles of each of the following;

(a) Database Administrator **(2 marks)**

b) System analyst **(2marks)**

15. Define the following terms in relation to computer security: **(6 marks)**

a) Data Encryption

b) Sabotage

c) Firewall

SECTON B: 60mks

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

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

b) Below is an algorithm that is used to compute the values of R, S and T.

```
P = 5
Q = 6
INPUT N
If N is GREATER OR EQUAL TO 10
R= P * Q
S = Q – P
T = P + Q + R + S
ELSE
R = P + Q
S = Q
T = R + S
END IF
PRINT R, S and T
```

c) From the algorithm, determine the output if the input value of N is **(6 marks)**

i) 7;

ii) 10;

d) Draw a flowchart for the algorithm in question 16(b) **(6 marks)**

17. a) Name and describe Three main application areas of Artificial Intelligence in ICT. **(6 marks)**

b) State three advantages of automated production in manufacturing industries **(3 marks)**

c) List FOUR types of computer processing files. **(4 marks)**

d) Distinguish between data verification and data validation **(2 marks)**

18. a) Name and Explain any three types of errors that are likely to exist in a program? **(6 marks)**

b) Explain TWO functions of networking software in a computer **(2 marks)**

c) Give two advantages and two disadvantages of impact printers **(4 marks)**

d) State three features of a fifth generation computer that distinguishes it from a fourth generation computer. **(3 mark**

19. a) Explain the following types of data processing modes

(i) Batch processing **(2 marks)**

(ii) Real time processing **(2 marks)**

b) Differentiate between phased and parallel implementation methods. **(2marks)**

c) A student presented a budget in the form of a worksheet as follows

	A	B	C
1	Item	Amount	
2	Fare	200	
3	Stationery	50	
4	Bread	300	
5	Miscellaneous	150	
6	Total		

i) Given that the value 0.5 is typed in cell B9, write the shortest formula that would be typed in cell C2 and then copied down the column to obtain half the values in column B. **(2 marks)**

ii) Write two different formulae that can be typed to obtain the total in cell B6 and then copied to cell C6. **(2 marks)**

d) (i)Give any two components of Satellite. **(2 marks)**

(ii) Give three advantages of satellite. **(3 marks)**

20. a) Describe the mesh topology as used in networking. **(2 marks)**

b) Give three Advantages of the mesh topology. **(3 marks)**

c) Give two Examples of radio waves. **(2 marks)**

d) Give two reasons why would you prefer fiber optical cables to any other cable? (2 marks)

e) State two reasons for use of binary in digital technology. **(2 marks)**

f) Determine the value of X in the equations:

i) $X_2 + 1101_2 = 70_{10}$ **(2 marks)**

ii) $100110_2 - X_2 = 001010_2$ **(2 marks)**

KCSE 2024 FINAL PREDICTION

EXPECTED EXAM 10

451/2

COMPUTER STUDIES

PAPER 2 (PRACTICAL)

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 the software used in each question attempted in the printouts used.*

(d) *Answer **all** the questions.*

(e) *All questions carry equal marks.*

(f) *Passwords **should not be used** when saving files.*

(g) *All files must be transferred to the CD-R/ CD-RW.*

(h) *Make printouts of your answers on the papers provided for printing.*

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

(j) *Hand in all the printouts and the CD/removable storage medium provided.*

(k) Candidates must answer the questions in English.

1.(a) The following table contains details of Huduma Hospital.

PATIENT ID	PATIENT NAME	DATE OF VISIT	DATE OF DISCHARGE	BILLED AMOUNT	PAID AMOUNT	MODE OF PAYMENT	RECEIPT NO	DOCTOR ID	DOCTOR NAME	AILMENT
P3001	TOSHA	2/2/2023	2/3/2023	50000	10000	Mpesa	6001	D101	Amani	Cancer
P3002	PHILYS	13/2/2023	18/2/2023	20000	10000	Mpesa	6006	D101	Amani	Fracture
P3003	SALIM	12/2/2023	16/2/2023	15000	12000	Cash	6011	D105	Bahati	Cholera
P3004	BRAYO	14/2/2023	16/2/2023	17000	5800	Cash	6015	D103	Upendo	TB
P3005	PHILIP	17/2/2023	17/2/2023	1000	1000	Cash	6030	D104	Uzima	Headache
P3006	JOAN	20/2/2023	21/2/2023	5000	5000	Cash	6040	D103	Upendo	TB
P3007	CARLOS	1/3/2023	3/3/2023	7500	5000	Cash	6051	D101	Amani	Toothache
P3008	QUINTER	2/3/2023	5/3/2023	4500	2500	Mpesa	6073	D102	Joyce	Malaria
P3009	GULAMU	5/3/2023	15/3/2023	15000	2500	Cash	6084	D102	Joyce	Malaria
P3010	GERALD	17/3/2023	21/3/2023	8500	3500	Mpesa	6099	D104	Uzima	BP

a) Create a database file that can be used to store the above data and save it as **Huduma _Hospital**.
(2 marks)

b) Design THREE tables, one for the **Patient_ Details, Account_ Details** and **Doctors_ Diagnosis**
(14 marks)

c) Create a relationship between the three tables **(5 marks)**

d) Using appropriate forms, enter the information given into the Three tables **(13 marks)**

e) Create a query ;

i) To display patients who paid via Mpesa. Save the query as **Mpesa Payments** **(2 marks)**

ii) To display the number of day's patients stayed in the hospital. Save the query as **Days Spend** **(4 marks)**

f) Create a report showing all patients whose arrears (unpaid balances) are greater than 5000. Save the report as **Patient Arrears** **(5 marks)**

g) Print out the following:

i) **Patient_ Details, Account_ Details** and **Doctors_ Diagnosis** tables **(3 marks)**

ii) **Mpesa payments** query **(1 mark)**

iii) **Patient Arrears** report **(1 mark)**

2.(a) The Battle Within intends to use a Desktop Publishing program to design the following publication that will feature in a newspaper. Assume you have been assigned the task.

a) Open a Desktop Publishing Program and apply the following:

i) Page layout orientation: Portrait **(1 mark)**

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

iii) All Margins: 0.5" **(4 marks)**

iv) Save the publication as ***The Battle Within*** **(2 marks)**

b) Design the publication as it appears ensuring it covers the entire printable area. **(35 mrks)**

c) Insert the header and footer and format them as follows:

i) Header: **Email:** stressmanagementkenya@gmail.com and align it at the Centre **(2 marks)**

ii) Footer: **#TalktoSomeone#PreventSuicide** and align it to the right. **(2 marks)**

d) PRINT the publication **(3 marks)**



THE BATTLE WITHIN

Consultancy Services

Teenagers Mental Health, Self Awareness Drugs, Sexuality & Cultism Awareness Campaign

Introduction

2023

Why is mental health awareness campaign important?

- 20% of Kenyans experience depression before the age of 30 years according to the WHO.
- According to WHO, every **40 seconds** somebody commits suicide across the globe; making an approx. 800,000 people dying from suicide annually.
- Kenya is losing at least 10 individuals daily due to suicide and at least 5 more to mental; health related complication.
- Teenagers are engaging in social evil and dangerous practices as they try to find their identity.
- In fact, secondary schools are the hotspots for recruitment into the vices.

TRAINING OBJECTIVES

- Understanding stress, signs & symptoms in teenagers.
- Understanding effects of stress on development of a teenagers brain.
- How to understand types of immorality and their sources.
- Types of addiction sources and their consequences.
- Understanding how to handle , social media without negative influence.
- Self awareness and development in teenagers.

Background

Social media and homosexuality , drugs and crime

a. The world has shifted from the intimate physical relationships to online communities that are attached together by similar interests.

b. Teenagers are excited about being able to follow people and communicate with them about intimate issues without having to travel to meet.

c. Fake social media lives are a negative influence on the lives of the teenagers who do not have a way of differentiating fake from genuine.

d. Drug abuse has been accepted as part of social media content making it look fashionable among teenagers.

To Obtain Copies of Respective Marking Schemes / Answers

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kcsepredictions@gmail.com

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SUCCESS

CAUTION TO KCSE 2024 CANDIDATES:

IN CASE / ON EVENT YOU REALIZE PART OF THESE QUESTIONS WERE DIRECTLY OR INDIRECTLY LIFTED TO THE UPCOMING FINAL KCSE 2024 EXAMINATIONS …

PLEASE DO NOT PANIC!

KILA LA HERI