



COMPUTER PAPER 1

KABARAK HIGH
ALLIANCE BOYS
ALLIANCE GIRLS
ASUMBI GIRLS
KISII SCHOOL
KENYA HIGH
MANGU SCHOOL
MARANDA SCHOOL
MASENO SCHOOL
MERU SCHOOL
MOKASA JOINT 1
STAREHE GIRLS
STAREHE BOYS
LENANA SCHOOL
MOI GIRLS ELDORET
NAIROBI SCHOOL
FRIENDS SCHOOL KAMUSINGA
KABIANGA SCHOOL

Compiled and distributed by Goldlite Online
Supplies. For these and more inbox/text /
WhatsApp 0724351706/0726960003. Marking

*These exams have been compiled from recently done
national schools' trials and joint series*

KNEC COMPLIANT

GOLDLITE ONLINE SUPPLIES
Kenya Certificate of Secondary Education
KCSE TOP SCHOOLS TRIAL SERIES 2025

Name Admission number

Candidate's Signature.....Date.....

KABARAK HIGH SCHOOL TRIAL EXAMS

451/1

COMPUTER STUDIES

PAPER 1

INSTRUCTION TO CANDIDATES

- a) Write your name and index number in the space provided above.*
- b) Sign and write the date of examination in the spaces provided above.*
- c) This paper consists of **two** sections **A** and **B**.*
- d) Answer **all** the questions in section **A**.*
- e) Answer question **16** (Compulsory) and any other **three** questions from section **B**.*
- f) All answers should be written in the space provided in the question paper.*
- g) **Do not remove any pages from this booklet.***
- h) **Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.***
- i) **Candidates should answer the questions in English.***

FOR EXAMINERS USE ONLY

SECTION	QUESTION	ACTUAL SCORE
A	1 – 15	
B	16	
	17	
	18	
	19	
	20	
TOTAL MARKS	100	

SECTION A (40 MARKS)
ANSWER ALL QUESTIONS IN THIS SECTION

1. State **One** technological difference between third generation and fifth generation of computers.

(1 Mark)

.....

.....

.....

.....

2. When buying computer software, one can buy either single purpose or integrated software, state **Two** advantages of using integrated software. (2 Marks)

.....

.....

.....

.....

.....

3. a) Describe interrupt handling as used in operating system. (2 Marks)

.....

.....

.....

.....

- b) Differentiate between single user and multiuser operating system. (2 Marks)

.....

.....

.....

4. a) List four examples of word processor software (2 Marks)

.....

.....

.....

.....

.....

- b) List **Two** types of files in mail-merging (1Mark)

.....

.....

.....

5. Describe the following as used in windows operating system (4 Marks)

i. Disk formatting

.....

.....

.....

.....

ii. Disk partitioning

.....

.....

.....

6. Differentiate between workbook and worksheet (2 Marks)

.....

.....

.....

.....

7. The worksheet below contains information on student's shopping list. Use it to answer the questions that follows.

	A	B	C	D
1	Item description	No. of items	Cost per item	Total cost
2	Books	10	50	500
3	Calculators	2	500	1000
4	Soap	3	200	600
5	Sugar	2	180	360
6	Pens	5	40	200
7				

i. Write a formula to get the number of items bought which are greater or equal to 5. (2 Marks)

- ii. Based on the cost of the items bought, write a formula that can be used to output the comments based on the following details. (2 Marks)

Cost of item	comment
≥ 500	Most expensive
≥ 400	Expensive
< 400	Moderate

8. Application software includes programs like word processor, spreadsheet, desktop publishing and database. Each of the packages has unique features. List **Two** database objects used when manipulating a database. (2 Marks)

.....

.....

.....

.....

.....

9. Differentiate between One to One and One to Many relationships as used in databases (2 Marks)

.....

.....

.....

.....

.....

10. a) List **Four** types of publications that can be designed using desktop publishing program. (2 Marks)

.....

.....

.....

.....

.....

- b) Distinguish between tracking and kerning (2 Marks)

.....

.....

.....

.....

.....

11. Apart from internet service provider, state any other **Two** internet connectivity requirements needed by form four students to enable them do online assessment examination. (2 Marks)

.....

.....

.....

.....

12. Distinguish between **Cc** and **Bcc** as used in e-mail (2 Marks)

.....

.....

.....

.....

13. State **Two** disadvantages of using an e-mail (2 Marks)

.....

.....

.....

.....

.....

14. Distinguish between insert mode and type over mode as used in data entry. (2 Marks)

.....

.....

.....

.....

.....

.....

.....

.....

.....

15. Explain the following types of computer crimes: 4 Marks

i. Piracy

.....

.....

.....

.....

ii. Fraud

.....

.....

SECTION B (60 MARKS)

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

16. (a) Differentiate between **source code** and **object code** as used in programming. (2 Marks)

.....

.....

.....

.....

.....

(b) Define the following types of errors (2 Marks)

i. Syntax errors

.....

.....

.....

.....

ii. Logical errors

.....

.....

.....

.....

c) To qualify for a national ID, an applicant must be 18 yrs or above. 50 citizens applied for the ID. Draw a flowchart that would read the name and age of an applicant and display the names of those who qualify for the ID. An applicant who will not qualify should display the comment “under age “. (9 Marks)

d) List **Two** control structures used in your flowchart (2 Marks)

.....

.....

17. a) Using four- bit two’s complement notation, perform the following arithmetic: (3 Marks)

i) $101_2 - 111_2$

ii) Convert the following decimal fraction to binary giving your answer in using 8-bit notation.
 43.125_{10} (3 Marks)

b) i. State **Three** roles of a network administrator. (3 Marks)

.....

.....

.....

ii. When constructing a computer laboratory, it is advisable to ensure it meets all the requirements for safety of users and the computers. State the effect of the following on computers: (2 Marks)

a) Unstable power supply

.....

.....

.....

b) Rain water leaking through the roof (2 Mark)

.....

.....

.....

c) Victory school intends to buy a printer for producing school fees payment receipts for parents in triplicates using carbon papers.

i. Which printer would one advice the school to buy? (1 Mark)

.....

.....

ii. Give a reason for your answer. (1 Mark)

.....

.....

18. a) Describe the following guides as used in desktop publishing (4 Marks)

i. Ruler guides

.....

.....

.....

ii. Margin guides

.....

.....

.....

b) State **Four** advantages of using a word processor over manual typewriter when creating documents for use in a big organization. (4 Marks)

.....

.....

.....

.....

.....

.....

.....

c) State **Four** operations that may be performed on a file by an operating system. (2 Marks)

.....

.....

.....

d) Describe the following types of cell referencing as used in spreadsheet: (4 Marks)

i. Absolute cell referencing

.....

.....

.....

ii. Relative cell referencing

.....

.....

.....

iii. Write the following acronyms in full: (1 Mark)

CMOS

.....

ASCII

.....

19. a) Explain three modes of data communication (3 Marks)

i. Simplex

.....

.....

.....

ii. Half duplex

.....

.....

.....

iii. Full duplex

.....

.....

.....

b) Describe the following terminologies used in data communication: (4 Marks)

i. Attenuation

.....

.....

.....

ii. Modulation

.....

.....

.....

c) State **two** advantages of star topology. (2 Marks)

.....

.....

.....

d) Files in storage devices can be organized serially, sequentially or randomly for ease of access. State **Three** disadvantages of sequential file organization. (3 Marks)

.....

.....

.....

.....

.....

.....

e) Explain the following terms as used in internet and e-mail: 3Marks

i. Login

.....

.....

.....

ii. Sign up

.....

.....

.....

iii. Surf

.....

.....

.....

20. i) Differentiate between private and confidential data used in data security and control. (4 Marks)

.....

.....

.....

ii) State **Three** signs of a computer infected with a virus. (3 Marks)

.....

.....

.....

.....

ii) State **Two** functions of networking operating system other than providing network security. (2 Marks)

.....

.....

.....

.....

b) Explain the following internet services: (4 Marks)

i. E-commerce

.....

.....

.....

.....

ii. E- learning

.....

.....

.....

.....

c) Jane was printing a document but the printer did not produce any printout. Give **Two** possible reasons for this. (2 Marks)

.....

.....

.....

.....

GOLDLITE ONLINE SUPPLIES
Kenya Certificate of Secondary Education
KCSE TOP SCHOOLS TRIAL SERIES 2025

Name Admission number

Candidate's Signature..... Date.....

ALLIANCE GIRLS HIGH SCHOOL TRIAL EXAMS

451/1

COMPUTER STUDIES

PAPER 1

INSTRUCTION TO CANDIDATES

- a) Write your name and index number in the space provided above.
- b) Sign and write the date of examination in the spaces provided above.
- c) This paper consists of **two** sections **A** and **B**.
- d) Answer **all** the questions in section **A**.
- e) Answer question **16** (Compulsory) and any other **three** questions from section **B**.
- f) All answers should be written in the space provided in the question paper.
- g) **Do not remove any pages from this booklet.**
- h) **Candidates should answer the questions in English.**

[Contact us on 0724351706/0726960003](tel:0724351706)

[For more papers for all subjects and marking schemes](#)

For Examiner's Use Only

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

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
6mks

(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

GOLDLITE ONLINE SUPPLIES
Kenya Certificate of Secondary Education
KCSE TOP SCHOOLS TRIAL SERIES 2025

Name Admission number
Candidate's Signature.....Date.....

BAHATI GIRLS HIGH SCHOOL TRIAL EXAMS

451/1

COMPUTER STUDIES

PAPER 1

[CONTACT US ON 0724351706/0726960003](tel:0724351706/0726960003)

[FOR MORE PAPERS FOR ALL SUBJECTS AND MARKING SCHEMES](#)

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.
- (g) **This paper consists of 13 printed pages.**
- (h) Do not remove any pages from this booklet.
- (i) **Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.**
- (j) **Candidates should answer the questions in English.**

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			

Answer all the questions in this section in the spaces provided

1. List any THREE examples of Database packages popularly in use today.

(3 marks)

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

2. List any TWO functions of the Control Unit

(2 marks)

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

3. Mobile devices such as Smartphones and Tablets use an operating system.

List any THREE types of operating system found in mobile devices. (3 marks)

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

4. A group of students are producing a class newsletter which they will email to parents of students in the class. The students have decided to use a smartphone. Data for the newsletter will be input, stored and output by the smartphone.

Identify any TWO devices that are part of the smartphone that could be used to input the data for the newsletter. (2marks)

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

5. Many books contain a *gutter margin*. Explain gutter margin as used in word processing. (2marks)

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

6. a) Distinguish between General Purpose computers and Special Purpose Computers (2 marks)

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

b) Define toggle keys found on a standard keyboard, giving any TWO examples
(2 marks)

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

7. Ujuzi High School is about to set up a computer Laboratory. Advise them on three measures to take in order to ensure proper ventilation in the Room.
(3 marks)

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

8. a) Define Virtual Memory.

.....
.....

b) Name any ONE place where virtual memory may be found in a computer.
(2 marks)

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

9. List any THREE differences between *Cathode Ray Tube Monitors* and *Flat Panel Monitors*
(3 marks)

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

10. a). One of the factors to consider when purchasing computer hardware is warranty. List any TWO contents of a warranty.
(2 marks)

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

b). Distinguish between portability and compatibility as used in computer hardware.
(2 marks)

.....
.....

11. A computer studies student is creating a movie, in school, for a project. He needs to take the movie home to edit it. The student decided to use solid-state memory card (SSD card) to transport the movie files. The student is unable to save the work on the memory card.

Give any TWO error messages that may appear when attempting to save the work.(2marks)

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

12. Mention any TWO advantages of serial cables **over** parallel cables for data transmission. (2 marks)

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

13. List any TWO ways that *text* can be made to fit in a text box in desktop publishing software (2marks)

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

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

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

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

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

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

(2marks)

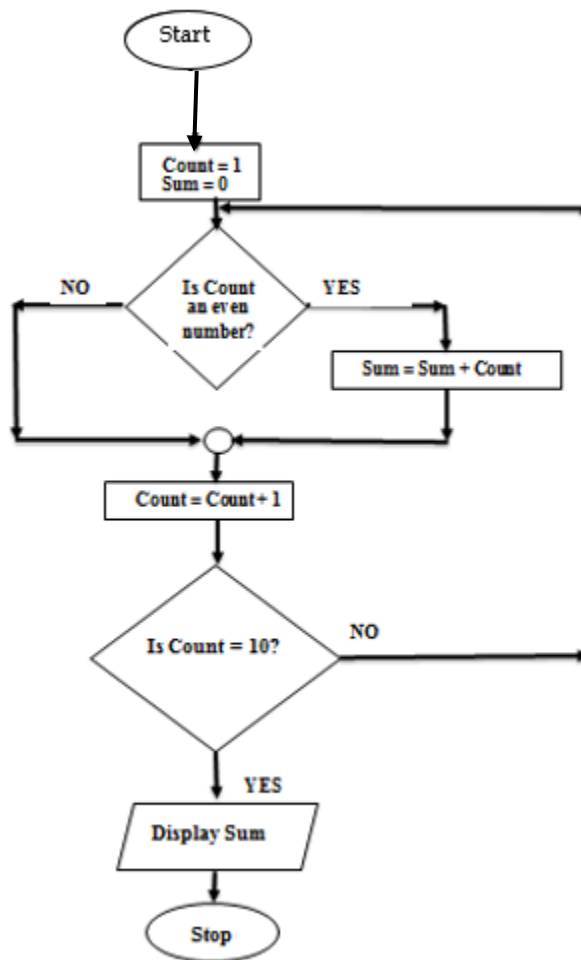
SECTION B (60 Marks)

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

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

.....
.....

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



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

.....

.....

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

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

.....

.....

.....

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

.....

.....

.....

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

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

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

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

c) Give any TWO characteristics of a good system analyst. (2 marks)

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

d). Describe the THREE components of an expert system (3 marks)

.....

18. Lawino opened her flash disk in one of the school's computers using drive F. she had saved her work in a folder named "MINE". This folder has subfolders for PICTURES, PERSONAL and AUDIO. In PERSONAL subfolder, there are files such as MyDocs.xlt and FamilyDocs.pff, while in PICTURES there are subfolders such as OFFICE and CHURCH.

a) i) Draw a directory tree structure for Lawino. (2 marks)

ii) In CHURCH subfolder there is a file named OldPicture.jpg. Write a path to this file. (2 marks)

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

ii) She opened the file OldPicture.jpg, then decided to delete it. Explain what would happen. (2 marks)

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

b) i) One classification of operating systems according to user-interface is menu driven. Explain menu driven. (2 marks)

ii) Describe, with the help of an example, transcription errors. (3 marks)

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

c) In the academic office of our school, there is a master file and a reference file.

i) Distinguish between a master file and a reference file. (2 marks)

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

ii) For each of the files above (i), name any TWO pieces of information that can be held in each of them in relation to school. (2 marks).

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

19. (a)(i) The formula B2+\$C\$2 was entered in cell D2 then copied to cell F2.
Show the new formula in cell F2 and give a reason for your answer.. (2 marks)

.....
.....

(ii) State the meaning of each of the following terms as used in spreadsheets:

(A) Countif () (2 marks)

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

(B) Max () (2 marks)

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

(b)(i) Explain two types of *documentation* produced when developing a system by a system analyst. (2 marks)

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

(c) Nosim has developed a computerized system for a school and currently in its change over stage, where the new system is introduced in a department then

tested to ascertain its effectiveness and once its performance is satisfactory it is implemented in the entire organization.

(i) Identify the changeover strategy used. (1 mark)

.....

(ii) Explain any TWO advantages of the changeover strategy identified in (i)above.

(4 marks)

.....
.....

20. Arosy bought a smartphone. Smartphones can be connected using wired or wireless methods.

a) i) Give two disadvantages, to Arosy, of using *a wired* method to connect to the smartphone. (2marks)

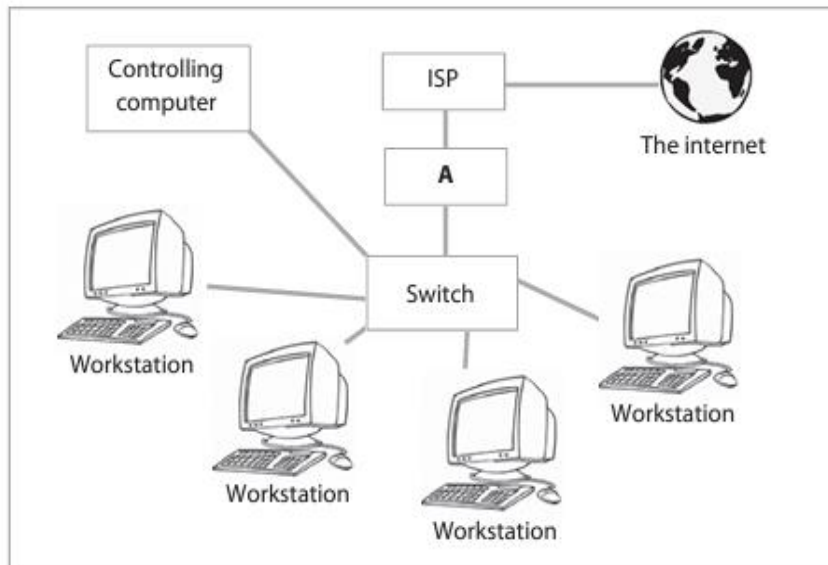
.....

ii) Give two disadvantages to Arosy of using *a wireless* method to connect to the smartphone. (2marks)

.....

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

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



Device A (1 mark)

.....

ii) Identify any TWO types of connections that can be used to connect the company network to the internet. (2marks)

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

c) i) What is an ISP? (2 Marks)

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

ii) Give four examples of ISPs. (2 Marks)

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

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

Explain the following terminology as used in data security (4 Marks)

i) Cypher text

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

ii). Piracy

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

GOLDLITE ONLINE SUPPLIES
Kenya Certificate of Secondary Education
KCSE TOP SCHOOLS TRIAL SERIES 2025

Name Admission number

Candidate's Signature Date.....

KABIANGA SCHOOL TRIAL EXAMS

451/1

COMPUTER STUDIES

PAPER 1

INSTRUCTION TO CANDIDATES

- a) Write your name and index number in the space provided above.*
- b) Sign and write the date of examination in the spaces provided above.*
- c) This paper consists of **two** sections **A** and **B**.*
- d) Answer **all** the questions in section **A**.*
- e) Answer question **16** (Compulsory) and any other **three** questions from section **B**.*
- f) All answers should be written in the space provided in the question paper.*
- g) Do not remove any pages from this booklet.*
- h) Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.*
- i) Candidates should answer the questions in English.*

[CONTACT US ON 0724351706/0726960003](tel:0724351706/0726960003)

[FOR MORE PAPERS FOR ALL SUBJECTS AND MARKING SCHEMES](#)

FOR OFFICIAL USE ONLY

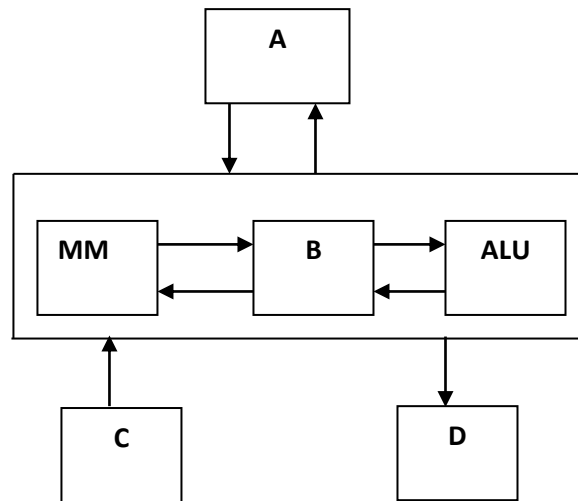
Section :	Question	Candidates Score
A	1-15	
B	16	
	17	
	18	
	19	
	20	
Total Score		

*This paper consists of 12 printed pages.
Candidates should check the question paper to ascertain that*

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

1. Name **TWO** computer crimes. (1mk)
.....
2. Give an example of the following: (1mk)
 - a) Keying device (1mk)
.....
 - b) Pointing device (1mk)
.....
 - c) Scanning device. (1mk)
.....
3. State **two** practices to be observed in order to ensure the safety of the computer user. (2mks)
.....
.....
.....
4. a) What is a section break as used in word processing? (1mk)
.....
.....
 - b) State two section breaks that can be used in a word processor (2mks)
.....
5. A printer fails to work as expected when a document is sent to be printed. The user has checked that the on-line light of the printer is on and the printing paper is correctly inserted. Give **TWO** other possible reasons why the printing process failed. (2mks)
.....
.....
.....
6. For each of the following printers state the print modes (1mk)
 - a). Dot matrix (1mk)
.....
 - b). Inkjet printer (1mk)
.....
7. Programmers use programming languages to write programs. Based on this statement, distinguish between the following terms as applied in programming. (1mk)
 - a). Source code and an object code. (1mk)
.....
.....
 - b). Machine language and assembly language. (1mk)
.....
.....

8. Computer hardware components consists of control unit(CU), main memory(MM), arithmetic and logic unit(ALU), secondary storage devices, input and output devices. Study the diagram below and answer the questions that follow.



Name the parts labelled A, B, C and D.

(2mks)

- A.....
 B.....
 C.....
 D.....

9. State the purpose of disk defragmentation

(2mks)

.....

10. a). What is a secondary storage device?

(1mk)

.....

- b). Give **THREE** reasons why DVD's are increasingly being used today.

(3mks)

.....

11. a). Explain the following features as used in word processing.

- i). Word wrap

(1mk)

.....

- ii). Thesaurus

(1mk)

.....

- b). The first column in the table below contains the formula stored in cell C10 of a spreadsheet. Enter the formulae as they would appear when copied to cell F15 of the same spreadsheet.

(3mks)

FORMULA IN C10	FORMULA IN F15
=A5*B5	
=A\$5	

12. List the steps that you would use to correct wrongly spelt words in a document using the spell-checking feature. (3mks)

.....

.....

.....

13. a). What is meant by the term tele-commuting? (1mk)

.....

.....

- b). An organization intends to install tele-commuting in its operations. List **THREE** disadvantages that are likely to be encountered. (3mks)

.....

.....

.....

14. a). Name the stage of systems development life cycle where an interview is used. (1mk)

.....

.....

- b). State **TWO** advantages and **TWO** disadvantages of using interviews at the stage in 14(a) above.

Advantages (1mk)

.....

.....

Disadvantages (1mk)

.....

.....

15. List any four tasks that an electronic spreadsheet should be able to perform other than calculations. (2 mk)

.....

.....

.....

SECTION B (60 marks)

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

16. (a) When invoicing customers, the invoice clerk has to work out the discounts allowable on each order. Any order over 20,000/= attracts a “bulk” discount of 7%. A customer within the trade is allowed 10%. There is also a special discount of 2% allowed for any customer who has been ordering regularly for over 2 years.

Using a flowchart show clerical procedure for working out discount entitlement. (7Mks)

- (b) Name the control structures you have used in the flow chart (2mks)

.....

.....

- (c) Describe three methods you would use in error detection during program testing (6mks)

.....

.....

.....

.....

.....

17. a). (i) Define the term information system. (1mk)

.....

(ii) Differentiate between a closed system and an open system in relation to system boundary. (2mks)

.....

iii). Outline the stages of systems development life cycle in their logical sequence briefly describing what takes place at each stage. (7mks)

.....

.....

.....

.....

.....

.....

b). i). A user wishing to access the internet may use a modem or an ISDN connection. What is the purpose of a modem? (1mk)

.....

.....

ii). Explain why using an ISDN connection to the internet eliminates the need for a modem. (1mk)

.....

.....

iii). State **THREE** forms of communication that can be transmitted by an ISDN line. (3mks)

.....

.....

18. a). (i) What is data privacy? (1mk)

.....

ii). Give **FOUR** provisions of the Data Protection Act of 1984 regarding personal data. (4mks)

.....

.....

.....

b). List **FOUR** factors to be considered when choosing a data processing mode. (2Mks)

.....

.....

.....

.....

c). (i) What is an expert system? (1mk)

.....

.....

.....

ii). State **TWO** advantages and **TWO** disadvantages of using expert systems.

Advantages (2mks)

.....

.....

.....

Disadvantages (2mks)

.....

.....

.....

d). Explain the following terms as applied in internet communication.

i). Search Engine. (1mk)

.....

.....

.....

ii). Uniform Resource Locator (URL) (1mk)

.....

.....

.....

iii) Domain name (1mk)

.....

.....

.....

19. a). List **TWO** characteristics of good information. (2mks)

.....

.....

.....

b). (i). What is a database management system? (1mk)

.....

.....

.....

ii). State and explain **THREE** database models. (3mks)

.....

.....

.....

c). Describe the following types of files.

i). Master file. (2mks)

.....

.....

.....

ii). Backup file. (2mks)

.....

.....

.....

iii). Transaction file. (2mks)

.....

.....

.....

d). Explain the file organization methods given below.

i). Serial.

(1mk)

ii). Indexed sequential.

(1mk)

iii). Random.

(1mk)

20.

i (a) What is the hexadecimal equivalent of 767_8

(3 mks)

(b) Use one's compliment to solve the following sum: -5_{10}

(2 mks)

ii. Compute the values of X in the following expressions

(a) $24.35_{10} = X_2$

(3mks)

(b) $6A13_H = X_{10}$

(2mks)

(c) Using two's complement compute

(5mks)

$36_{10} - 25_{10}$

THIS IS THE LAST PRINTED PAGE

GOLDLITE ONLINE SUPPLIES
Kenya Certificate of Secondary Education
KCSE TOP SCHOOLS TRIAL SERIES 2025

Name Admission number

Candidate's Signature.....Date.....

KISII SCHOOL TRIAL EXAMS

451/1

COMPUTER STUDIES

PAPER 1

INSTRUCTION TO CANDIDATES

- a) Write your name and index number in the space provided above.*
- b) Sign and write the date of examination in the spaces provided above.*
- c) This paper consists of **two** sections **A** and **B**.*
- d) Answer **all** the questions in section **A**.*
- e) Answer question **16** (Compulsory) and any other **three** questions from section **B**.*
- f) All answers should be written in the space provided in the question paper.*
- g) **Do not remove any pages from this booklet.***
- h) **Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.***
- i) **Candidates should answer the questions in English.***

For Examiner's Use Only

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

CONTACT US ON 0724351706/0726960003

FOR MORE PAPERS FOR ALL SUBJECTS AND MARKING SCHEMES

SECTION A

1. (a) State any two types of data processing methods.

[1mrk]

(b) During a visit to the typing room, Jane a computer student observed a type of printer that uses a beam to create an image on a rotating drum. As the beam hits the drum, some regions attract ink toner particles. The toner is then fused onto a piece of paper.

i) State the name of this type of printer and indicate whether it is an impact or non-impact printer.

[1mk]

ii). List two advantages of using the printer mentioned in a. above.

[2mrks]

2. Bunam Water Company sends out field officers to take consumer meter readings. The data collected by the officers is then keyed into the computer. The system then generates utility bills which are printed and sent to the consumers.

i) State two transcription errors that are likely to occur during meter reading or input.

[1mrk]

ii. State two ways such errors can be avoided.

[2mrks]

iii. State the type of processing carried out.

[1mrk]

3. Mention at least two trends in the technological revolution of computers.

[2mrks]

4. Explain the importance of the following spreadsheet operations.

[2mrks]

Freezing columns

Data validation

5. Name two types of relationships that can be applied in database design.

[1mrk]

6. Briefly explain any Four block operations that can be performed on data in word processing.

[4mrks]

7. Mutiso wanted to upgrade the RAM of his computer. State two factors Mutiso should consider when purchasing a RAM module.

[2mrks]

8. Define the following terms:

[2mrks]

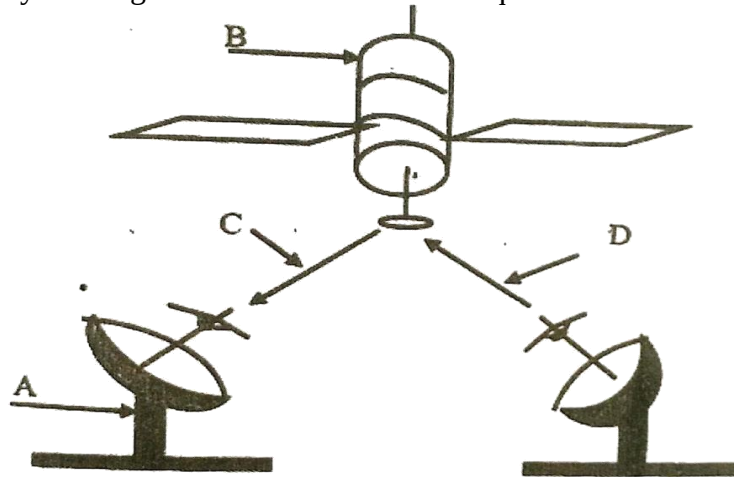
(i) Computer Port

(ii) Power supply unit

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

[2mrks]

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



(i) Name the communication media depicted in the above diagram:

[1mrk]

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

[3mrks]

A
B
C
D

11. In a desktop publishing document, an image embedded can be transformed in various ways. Name any two ways one can use to make the image fit in a designated area.

[2mrks]

12. Differentiate between source program and object program.

[2mrks]

13. Differentiate between the following terms in Internet.

[4mrks]

(i) Drafts and outbox

(ii) cc and bcc

14. State two characteristics of a computer that is infected by computer viruses.

[2mrks]

15. To process an instruction, the CPU goes through a cycle of three stages. Name each of the stages. [3mrks]

Section B
Answer question 16 and any other 3 questions in this section

16. a) State any three activities that occur in a program compilation process. [3mrks]

b) Give two types of errors that may be detected during program testing. [2mrks]

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

17. a. Describe the term prefixing an extra sign bit as used in data representation. [2mrks]

b. Convert each of the following numbers system.

(i) 0.78125_{10} to binary [2mrks]

(ii) $3A9_{16}$ to Octal [2mrks]

c. Perform the following binary operation. $1010.11 + 111.10 - 101.11$ [3mrks]

d) Using one's complement, arithmetic perform leaving the answer the decimal follow notation. $17_{10} - 45_{10}$ [6mrks]

18. (a) State THREE roles of a programmer in system development life cycle. [3mrks]

b) State four activities that may be carried out when disposing off an old system in an organization. [4mrks]

(c) Distinguish parallel changes over from straight change over as used in system implementation. [2mrks]

d) Discuss any two fact finding methods. [4mrks]

e) Differentiate between an open system and a closed system. [2mrks]

19. a) Explain four ways in which a programmer can make program code easy to follow. [4mrks]

b) List four examples of utility software. [2mrks]

d) State three benefits of having the advert uploaded on the Internet. [3mrks]

e) State four ways in which barcode readers may be used in school. [4mrks]

20. Networking is said to be important in facilitation of data transfer.

a) Dr. Jabari, a networking expert trained his students on various data communication aspects. After a lesson, he asked them to state and explain three modes of data transmission. As a student, what answers would you provide? [3mks]

b) Differentiate between LAN and WAN as used in computer networks. [2mks]

c) State two advantages of fiber-optic transmission media. [2mks]

d) In a computer network, a server computer must be installed with a network operating system in order to operationalize a number of network functions. State three functions performed by a network operating system (NOS). [3mks]

e) (i) Define the following terms as used in the internet.

Browser [1mk]

Spam [1mk]

ii) Many organizations own and manage websites for various uses. One use of website by a business is conducting their business activities through e-commerce. Mention three advantages of e-commerce.

[3mks]

GOLDLITE ONLINE SUPPLIES
Kenya Certificate of Secondary Education
KCSE TOP SCHOOLS TRIAL SERIES 2025

Name Admission number
Candidate's Signature..... Date.....

MANGU HIGH SCHOOL TRIAL EXAMS

451/1

COMPUTER STUDIES

PAPER 1

INSTRUCTION TO CANDIDATES

- a) Write your name and index number in the space provided above.*
- b) Sign and write the date of examination in the spaces provided above.*
- c) This paper consists of **two** sections **A** and **B**.*
- d) Answer **all** the questions in section **A**.*
- e) Answer question **16** (Compulsory) and any other **three** questions from section **B**.*
- f) All answers should be written in the space provided in the question paper.*
- g) **Do not remove any pages from this booklet.***
- h) Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.*
- i) Candidates should answer the questions in English.*

[CONTACT US ON 0724351706/0726960003](tel:0724351706/0726960003)

[FOR MORE PAPERS FOR ALL SUBJECTS AND MARKING SCHEMES](#)

FOR EXAMINER'S USE ONLY

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

SECTION A (40 MARKS)

Answer All The Questions In Section

1. The principal of a school is concerned that students may be hacking into the exam score database to change their marks. Other than password state three ICT methods that could be used to prevent this from happening (3marks)

.....

.....

.....

2. Describe the components of a spreadsheet function (3marks)

.....

.....

.....

3. Explain the term prototyping as used in system development (2marks)

.....

.....

.....

4. The Director of a private school based in Nairobi has decided that the school magazine will now be included in the school website. Give three reasons why the Director thinks it is a good idea to replace the paper version with a website version (3marks)

.....

.....

.....

5. Describe three operational factors the system analyst need to consider in hardware and software requirement during requirement specification phase (3marks)

.....

.....

6. Johnson uses a memory stick to transfer her work from school to home. Give three reasons why memory stick are often preferred to CDs for storing work (3marks)

.....

.....

...

7. There are several ways to maintain computer programs during system development life cycle. Describe three ways in which a computer program can be maintained (3marks)

.....

.....

.....

8. State three reasons for extensive use of repeaters in Safaricom, and Airtel networks. (3marks)

.....

.....

.....

9. Name four Mechanical devices that were used for counting before the electronic computers (4marks)

.....

.....

.....

10. Describe two ways of creating text in Microsoft Publisher (2marks)

.....

11. Name three benefits accrued from utilizing ICT platforms in industrial systems like Process control (3marks)

.....

.....

.....

12. Describe three functions of the antivirus program (3marks)

.....

.....

.....

13. A finance company uses cloud storage to archive their accounts. Describe three advantages of using cloud storage platform. (3marks)

.....

.....

.....

14. Explain the line of sight principle in data communication (2marks)

.....

.....

.....

15. The Kenya Universities and Colleges Central Placement Service (KUCCPS) is a State Corporation that provides career guidance and selects students for admission in Universities and Technical Training institutes. Describe two types of Universities that KUCCPS can place students to pursue undergraduate courses in Kenya (2marks)

.....

.....

SECTION B (60 MARKS)

Answer question 16 and any other three questions in this section

16. .

(a) Give four guidelines a programmer should follow in order to design a good pseudo code (4marks)

.....

.....

.....

.....

.....
.....
(b) Describe the following looping structures

(i) Repeat.... Until (2marks)

(ii) While.... Do (2marks)

(c) Maranda High school pays casual employees based on the number of hours worked. The payment schedule is as shown below.

- ✓ Less than 10 hours @500 per hour
- ✓ Up to 15 hours @700 per hour
- ✓ More than 15 hours @900 per hour

Write a pseudo code that will prompt the user to key the Name, Number of hours worked and then compute the total wage for five employees (7marks)

17.

(a) Convert the following numbers to Decimal number system

(i) 010011.10001_2 (3marks)

.....
.....

(ii) 36.5_8 (3marks)

.....
.....

(b) Evaluate $1010_2 + 1010_2 - 1001_2 + 00010_2 - 1101_2$ (3marks)

.....
.....

(c) Using two complements, show how the arithmetic below would be carried on an 8-bit computer system by subtracting 40_{10} from 50_{10} , write your answer in decimal notation. (4marks)

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

(d) Describe two reasons for the use of Octal and Hexadecimal number system (2marks)

.....

18.

- (a) Apart from Keyboard and Mouse list any other three input devices found at the Point of sales Terminal (3marks)

-
-
-
-
- (b) Describe the functions of the components of VR (3marks)

(i) Glove

.....

(ii) Body suit

.....

.....

.....

(iii) Virtual Reality software

-
-
-
- (c) Describe four ways in which ICT platforms have improve transport services (4marks)

.....

(d)

- (i) Define the term Telecommuting (2marks)

-
-
-
-
- (ii) Give three problems experienced by organizations that use this innovation (3marks)

.....

19.

- (a) Name three Data Terminal Equipment used in a computer network (3marks)

(b) Use the diagram to answer the questions that follow



(i) Identify the topology represented in the above diagram (1mark)

.....

.....

.....

(ii) State the function of the part marked A (2marks)

.....

.....

.....

(iii) Name two limitation of this technology (2marks)

.....

.....

(c) Name four roles of a Network Administrator (4marks)

.....

.....

(d) Describe three main pathways in a computer in which components like ALU, Control unit, Register, Buffer Cache, Main memory use to transfer data and instruction between them (3marks)

.....

.....

20.

(a) A Secretary of a large Non-Governmental organization based in Nairobi was keying data collected from the field. In the first case the secretary keyed in “braek” instead of break then later keyed in 4596 instead of 4569

(i) Describe two types of errors illustrated above (2marks)

.....

.....

.....

(ii) State three ways of preventing errors identified in (i) above (3marks)

.....

(b) State three major limitations of serial file organization

(3marks)

.....

.....

.....

(c) What is normalization in Databases

(2marks)

.....

.....

.....

(d) State three key functions of primary key

(3marks)

.....

.....

.....

(e) A student created a query using fields from multiple tables, when he clicked on the run command the query did not display the dynaset but instead displayed “Type mismatch error”. Describe the cause of this anomaly

(2marks)

.....

.....

...

GOLDLITE ONLINE SUPPLIES
Kenya Certificate of Secondary Education
KCSE TOP SCHOOLS TRIAL SERIES 2025

Name Admission number

Candidate's Signature.....Date.....

MOI GIRLS ELDORET SCHOOL TRIAL EXAMS

451/1

COMPUTER STUDIES

PAPER 1

INSTRUCTION TO CANDIDATES

- a) Write your name and index number in the space provided above.*
- b) Sign and write the date of examination in the spaces provided above.*
- c) This paper consists of **two** sections **A** and **B**.*
- d) Answer **all** the questions in section **A**.*
- e) Answer question **16** (Compulsory) and any other **three** questions from section **B**.*
- f) All answers should be written in the space provided in the question paper.*
- g) **Do not remove any pages from this booklet.***
- h) **Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.***
- i) **Candidates should answer the questions in English.***

For Examiner's Use Only

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

SECTION A

1. Explain the term procedural language as used in computer programming. (2mks)

2. A company allows employees to telework work at home and communicate with the office using internet.
 - (i) State three ways that a report could be sent to the office using the internet. (3mks)

 - (ii) Give two benefits to the company of using video conferencing. (2mks)

3. List two types of job opportunities that are available in the field of computer software. (2mks)

4. Describe three ways of deleting a line of text in Microsoft word document. (3mks)

5. Explain the holistic thinking with respect of system development. (2mks)

6. Give three features of good algorithm. (3mks)

7. List three human features used in biometric systems installed in a computer to authenticate users. (3mks)

8. Mention three ways in which human beings issue commands to computer. (3mks)

9. Give four file management tasks that would be carried out by an operating system. (4mks)

10. What is input validation with regard to spreadsheet application. (2mks)

11. Explain three health challenges that workers may experience as a result of using ICT gadgets in an organization. (3mks)

12. Identify two circumstances under which a system analyst may prefer to use automated methods to collect data instead of questionnaire, observation, interviews and book review. (2mks)

13. Explain the following measures against unauthorized access: (2mks)
(a) Security policy

(b) Security monitor

14. Briefly explain two types of logical topologies. (2mks)

15. What does gutter mean in relation to column setting in DTP. (2mks)

SECTION B (60 MARKS)

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

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

b) Define the following terms

i) Hardware oriented

(2mks)

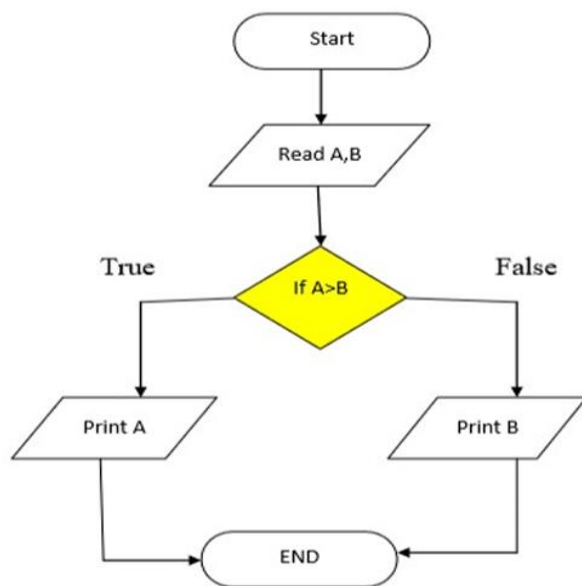
ii) Translator

(2mks)

iii) Syntax error

(2mks)

c) Study the following flowchart diagram.



i) Indicate the purpose of the above flowchart.

(1mk)

ii) Design a pseudocode for the flowchart above.

(5mks)

17. a) Study the table below and answer the questions that follow.

	A	B	C	D	E	F	G
1	Product ID	Product Name	Received Quantity	Sold Quantity	Balance Stalk	Unit Price	Total
2	KW00012	KDF	1000	300	700	60	
3	KW00023	Juice Kola	200	150	50	50	
4	KW00045	Gaddafi	130	130	0	10	
5	KW00029	Bread	400	200	200	50	
6	Trade Discount	10%					
7	VAT	16%					

- (i) Write down the formula that
Calculate the balance stock (2mks)
-
- Calculate the total cost (2mks)
-
- (ii) Given that customers who purchased Juice Kola were allowed 10% trade discount write a formula that would be used to get the total cost. (2mks)
-
- (iii) Value added Tax of 16% was imposed on Gaddafi write a formula for the new price. (2mks)
-

b) Describe three hardware related factors that one need to consider before installing an operating system. (3mks)

c) List three things that may cause malfunction in Microsoft Window Operating system environment (3mks)

18.a) List two types of domain names given to institutions of learning. (2mks)

b) Explain the function of each button on the navigation toolbar of a web browser. (3mks)

(i) History

(iii) Home

(iv) Download

c) Peter Kenneth bought a PC for his personal use at home. He wanted to do online writing at home to earn a living but there was no internet connectivity at home. Mention three internet connectivity requirements Peter Kenneth need to consider to get full internet connectivity. (3mks)

d) Give three reasons to justify why companies like Alibaba, Kilimali, Jumia, Copia and Masoko prefer selling their products on e-commerce platform (3mks)

e) Describe three factors to consider when choosing a file organization method. (2mks)

f) State two challenges facing electronic data processing modes in the current society. (2mks)

19. a) Enumerate four break-through in health care investigated by ICT (4mks)

b) Name four application areas of artificial Intelligence. (4mks)

c) List three scanning devices available at electronic Point Sale Terminal. (3mks)

d) Describe two ways of avoiding eavesdropping. (2mks)

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

20.a) List two types of fields in a database use to create relationship between multiple tables. (2mks)

b) Describe three types of relationships used in a database to link multiple tables. (3mks)

c) Describe the following field data types as used in Databases (2mks)

(i) Calculated

(ii) Attachment (2mks)

d) Name two power related problems usually affects the running of a computer in a lab. (2mks)

e) i) What is a toggle key? (1mk)

ii) Give three examples of toggle keys (3mks)

GOLDLITE ONLINE SUPPLIES
Kenya Certificate of Secondary Education
KCSE TOP SCHOOLS TRIAL SERIES 2025

Name Admission number
Candidate's Signature..... Date.....

NAIROBI SCHOOL TRIAL EXAMS

451/1

COMPUTER STUDIES

PAPER 1

INSTRUCTION TO CANDIDATES

- a) Write your name and index number in the space provided above.
- b) Sign and write the date of examination in the spaces provided above.
- c) This paper consists of **two** sections **A** and **B**.
- d) Answer **all** the questions in section **A**.
- e) Answer question **16** (Compulsory) and any other **three** questions from section **B**.
- f) All answers should be written in the space provided in the question paper.
- g) **Do not remove any pages from this booklet.**
- h) **Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.**
- i) **Candidates should answer the questions in English.**

[CONTACT US ON 0724351706/0726960003](tel:0724351706/0726960003)

[FOR MORE PAPERS FOR ALL SUBJECTS AND MARKING SCHEMES](#)

For Examiner's Use Only

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

SECTION A

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

1. State **two** reasons why it is advisable to follow the correct procedure when shutting down the computer at all times. (2 marks)

.....

.....

.....

2. Name and give the function of the following key symbols.

(i)

(1 mark)

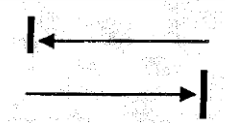


Name.....

Function.....

(ii)

(1 mark)



Name.....

Function.....

3. A computer virus is a destructive program that attaches itself to other files and installs itself without permission on the computer when the files are opened for use. Give **three** ways in which computers can be protected against virus attack (3marks)

.....

.....

.....

.....

.....

4. State **three** characteristics of computer main memory (3 marks)

.....

.....

.....

.....

.....

5. A printer fails to work as expected when a document is sent to be printed. The user has checked that the on-line light of the printer is on and the printing paper is correctly inserted. Give **two** other possible reasons why the printing process failed. (2 marks)

.....
.....
.....
.....
6. Describe the following terms as used in computer data security

a) Firewalls

(1 mark)

.....
.....
.....
b) Audit trail.

(1 mark)

.....
.....
.....
7. State **four** ways in which computers are used in banks

(2 marks)

.....
.....
.....
8. A student typed a passage in Microsoft word and the last line of the letter flowed to the second page.

a) What name is given to such last line that flowed to the second page

(1 mark)

.....
b) State **three** ways in which the student could have the letter to fit one page without changing the paper size

(3 marks)

.....
.....
.....
9. Explain the following terms as used in Microsoft Excel spread sheet package.

(3marks)

a) Range

.....
.....
.....
b) What if analysis

c) Automatic recalculation

10. State the data processing mode most appropriate for the following scenarios: (4 marks)

a) To prepare payroll for workers in Central Bank of Kenya

b) For automated production control in a chemical manufacturing industry

c) Managing ATMs transactions for KCB Ltd in different towns in the country

d) Prepare examination report forms at the end of an academic year

11. A school has decided to network its computers so that it can distribute information to all its departments. The school also intends to upload the information to parents. The various services are to be provided by servers. Briefly describe the services provided by (3marks)

a) Print server

b) File server

c) Mail server

12. Using an illustration, describe the term text direction as used in DTP (2 marks)

13. i) Define the following terms as used in a database

a). Attribute (1 mark)

b). Database model (1 mark)

ii) State **two** objectives of normalization as used in databases (2 marks)

.....

 14. Differentiate between a system administrator and a database administrator as used in computers .
 (2 marks)

15. State **two** advantages of using automated production in industries (2 marks)

SECTION B

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

16 a) State the best application area for the following programming language (4marks)

- (i) FORTRAN
- (ii) Mercury
- (iii) PHP
- (iv) C

b) State **two** differences between compiler and interpreter (2marks)

Compiler	Interpreter

c) Study the following pseudocode then answer the questions that follow:

```

Start
  R =2
  While R<=6 Do
    Y=2 + (R^R) + 4
    Print Y
    R = R + 2
  End while
Stop
  
```

(i) Work out the output from the pseudocode (4marks)

.....

.....
.....

(ii) Translate the above pseudocode to a flowchart (5 marks)

17. a) Differentiate between the following:

(i) Intranet and Extranet (2 marks)

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

(ii) Modulation and demodulation (2 marks)

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

(iii) Dial-up and direct ISP connection (2 marks)

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

b) Explain the importance of the following

(i) Web portal (1mark)

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

(ii) Hyperlink (1mark)

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

(iii) Blog (1mark)

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

c) Name the parts in the following addresses:

(i) tkariuki@equitybank.co.ke (2marks)

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

(ii) www.starshines.sc.ke (2marks)

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

d) Explain the concept of teleworking (2marks)

18.a) Fill the gaps in the following table (6marks)

Category of software	Use	Example
DTP		
		AutoCAD
	Used for statistical analysis of values	

b) Name the disk management activity described below (5 marks)

- (i) Creates logical drives in a disk
 - (ii) Deletes idle files to create more disk space
 - (iii) Aligns tracks and sectors in a disk
 - (iv) Allows contents of a file to occupy contiguous sectors for faster access.....
 - (v) Creation of copies of important files on another drive.....
- c) Explain what the following commands will accomplish once executed

(i) C:\> Copy S* E: (2marks)

.....

(ii) D:\>Deltree Subjects (2marks)

.....

19. a) Using examples of a school setup, explain the following changeover strategies (9 marks)

i) Straight change over

.....

ii) Parallel change over

.....

iii) Phased change over

.....

b) Give **two** implications of a poorly implemented system change over strategy (2 marks)

.....

.....

c) Explain any **two** characteristics of a system (4 marks)

.....

.....

.....

20. a) Give **three** ways of representing signed binary numbers in a computer (3 marks)

.....

.....

.....

b) Perform the following binary arithmetic and leave your answer in denary form (6 marks)

i) $1101.101_2 + 1011.01_2 + 111.11_2$

.....

.....

.....

.....

.....

ii) $10001.1001_2 - 1011.111_2$

.....

.....

.....

.....

c) Convert the following:

i) -34_{10} to twos complement
(3 marks)

.....

.....

ii) $7 \frac{4}{5}_{10}$ to binary (3 marks)

.....

GOLDLITE ONLINE SUPPLIES
Kenya Certificate of Secondary Education
KCSE TOP SCHOOLS TRIAL SERIES 2025

Name Admission number

Candidate's Signature.....Date.....

PANGANI GIRLS HIGH SCHOOL TRIAL EXAMS

451/1

COMPUTER STUDIES

PAPER 1

INSTRUCTION TO CANDIDATES

- a) Write your name and index number in the space provided above.
- b) Sign and write the date of examination in the spaces provided above.
- c) This paper consists of **two** sections **A** and **B**.
- d) Answer **all** the questions in section **A**.
- e) Answer question **16** (Compulsory) and any other **three** questions from section **B**.
- f) All answers should be written in the space provided in the question paper.
- g) **Do not remove any pages from this booklet.**
- h) **Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.**
- i) **Candidates should answer the questions in English.**

[CONTACT US ON 0724351706/0726960003](tel:0724351706/0726960003)

[FOR MORE PAPERS FOR ALL SUBJECTS AND MARKING SCHEMES](#)

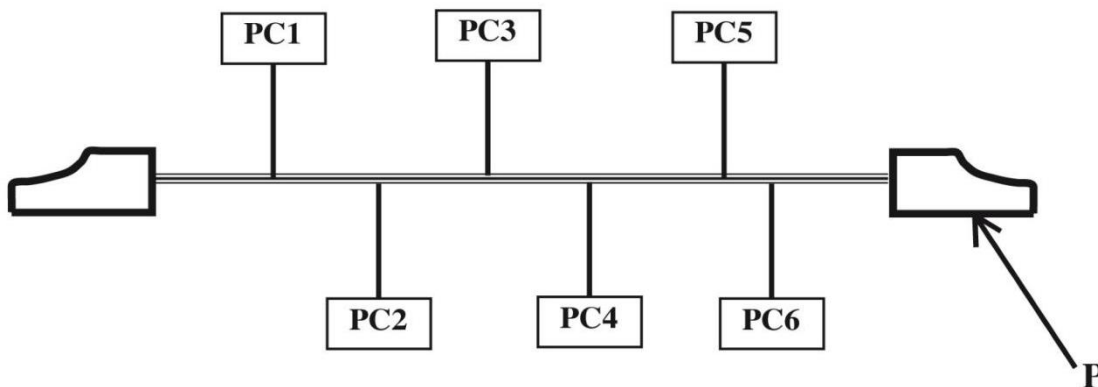
FOR EXAMINER'S USE ONLY

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

SECTION A (40MARKS) – ANSWER ALL QUESTIONS IN THIS SECTION

1. State **two** health issues that could arise from the use of unsuitable computer desk (2 marks)
.....
.....
.....
2. Give **two** reasons why portable computers like laptops and tablets are becoming popular in the modern society (2 marks)
.....
.....
3. Warranty is one of factors to put into consideration when acquiring computer hardware. State **two** contents of a warranty (2 marks)
.....
.....
4. List **four** devices that use scanning technology to capture data directly from the source (2 marks)
.....
.....
5. State **two** ways in which hardware failure is a threat to data security (2 marks)
.....
.....
6. Given the binary number 1101110100111100 , determine the number of :
 - i) Nibbles (1 mark)
.....
 - ii) Bytes (1mark)
.....
7. (a) State the role of the following communication devices
 - i) Repeater (1 mark)
.....
.....
 - ii) Router (1 mark)
.....
.....

(b) The figure below shows a type of network topology. Use it to answer the questions that follow;



(i) Identify the topology represented above (1 mark)

(ii) Name the component labelled **P** (1 mark)

iii) State the function of the component labelled **P** (1 mark)

8. Five students Walter, Faith, Mercy, Diana and Joachim scored the following marks in Mathematics 35, 76, 98, 44, and 54 respectively. They were recorded in cell C3 to C7. The teacher wanted to rank them in descending order so as to award them

a) Write down an appropriate formula that the teacher used (3marks)

b) Their grades were assigned as follows

80-100 A

60-79 B

40-59 C

Less Than 40 Fail

Write the formula used to assign the grades above (2marks)

9. Differentiate between hardware and software portability (2marks)

10. Differentiate between formatting and editing as used in word processor (2 marks)

11. Explain the meaning of the following terms as used with DTP (3 marks)

a) Crop

b) Embedded object

c) Master page

12. Explain the following as used in data security (3marks)

a) Fraud

b) Eavesdropping

.....

.....

c) Information security

.....

.....

13. Distinguish between relative cell referencing and absolute cell referencing as used in computing giving an example in each case (4 marks)

.....

.....

.....

14. Explain the following monitor terminologies as used in computing. (3 marks)

i) Resolution

.....

.....

ii) Pixels

.....

.....

15. State four stages in data processing (2 marks)

.....

.....

SECTION B (60MARKS)

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

16. a) Explain three errors detecting methods in program development (3marks)

.....

.....

.....

b) The gross salary of employees of Mutson chemists is based on the basic and additional benefits.

Employees with more than 10 years' experience get an additional pay of 10% of their basic salary.

Bonuses are given as per employees' sales of the month as:

>200,000 15%

100,000 – 200,000 10%

Below 100,000 5%

Draw a flowchart for the program that will calculate gross salary and output each employee's basic salary, gross salary and all benefits. (12marks)

17. a) State two ways of representing a signed binary number. (2 marks)

.....

.....

.....

b) Convert the decimal number 7.03125₁₀ to binary (3 marks)

c) Perform the following binary operation; (2 marks)

$$X_2 + 1101_2 = 70_{10}$$

d) Solve the following using twos complement 12₁₀ - 28₁₀ (5 marks)

e) i) Letter N is represented by 1001110 using a certain coding scheme. Identify the type of coding scheme used (1 mark)

.....
ii) Using the same coding scheme named in C (i) above, show how letter K can be represented (2 marks)

18. Describe each of the following data processing methods and give an example of where used. (4 marks)

(i) Online processing

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

(ii) Batch processing

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

b) Make a clear difference between (4marks)

(i) Logical file and physical file

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

(ii) Master file and back up file

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

c) An organization is facing threats to data integrity. Explain three ways on of how the threats can be minimized (3marks)

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

d) Write the following acronyms in full

(i) EBCOIC (1 mark)

.....
.....

(ii) COBOL (1 mark)

.....

 (iii) ASCII (1 mark)

.....

 (iv) BCD (1 mark)

19. The table below shows an extract of a spreadsheet document. Use it to answer the following questions.

	A	B	C	D	E	F
1	ITEM NAME	NUMBER OF ITEMS	UNIT COST	TOTAL BUYING PRICE	TOTAL SELLING PRICE	PROFIT
2	PENS	50	25			100
3	BOOKS	15	70			750
4	CUPS	30	120			500
5	RUBBER	75	15			250

a) What data type will be used to represent content of cell A1,C1 and E1? (3 marks)

.....

 b) State how cell F5 can be represented using R1C1 style? (1 mark)

c) Which formula can be used to compute;
 i) Buying price (1 mark)

ii) Profit (1 mark)

d) Write a function that will enable you get the product with the max profit (2 marks)

e) Explain the following editing tools in (4 marks)

i) Label

.....

 ii) Legend

.....
.....
iii) Chart title

.....
.....
iv) Data markers

f) Explain the concept of subtotals (3 marks)

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

20.a) Which data communication are represented below (3marks)

i. A police officer talking over a walkie talkie

.....

ii. A pastor speaking to Christians using public address

.....

iii. A student speaking to their parent over the mobile phone

b) Explain the following application areas of ICT. (5 marks)

i) Retail system

.....
.....

ii) Education system

.....
.....

iii) Transport System

.....
.....

iv) Scientific Research

.....
.....

v) Entertainment System

.....
.....

c) A teacher had a document of 20GB in a hard disk. He wanted to transfer the document into a CD of 700MB. Determine the number of CD's he requires (2 marks)

- d) Students of Amani high school intend to elect their school captain by secret ballot. State **two** ways high computers can improve the election process (2 marks)

.....

.....

.....

.....

- e) The following URL was typed by Amina: (3 marks)

http://www.cie.org.uk/computer studies

The URL composed of three parts; state the part of the URL that represents:

- i) File name

.....

.....

- ii) Protocol

.....

.....

- iii) Web server name

.....

.....

GOLDLITE ONLINE SUPPLIES
Kenya Certificate of Secondary Education
KCSE TOP SCHOOLS TRIAL SERIES 2025

Name Admission number

Candidate's Signature.....Date.....

SACHO SCHOOL TRIAL EXAMS

451/1

COMPUTER STUDIES

PAPER 1

INSTRUCTION TO CANDIDATES

- a) Write your name and index number in the space provided above.*
- b) Sign and write the date of examination in the spaces provided above.*
- c) This paper consists of **two** sections **A** and **B**.*
- d) Answer **all** the questions in section **A**.*
- e) Answer question **16** (Compulsory) and any other **three** questions from section **B**.*
- f) All answers should be written in the space provided in the question paper.*
- g) **Do not remove any pages from this booklet.***
- h) **Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.***
- i) **Candidates should answer the questions in English.***

[CONTACT US ON 0724351706/0726960003](tel:0724351706/0726960003)

[FOR MORE PAPERS FOR ALL SUBJECTS AND MARKING SCHEMES](#)

For Examiner's Use Only

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

SECTION A

Answer all questions in this section

1. Other than cost and compatibility, state two factors to consider when selecting an input device for an organization (2 Marks)

.....

.....

.....

2. State the importance of the cache memory to the computer (1 Mark)

.....

.....

.....

3. Distinguish between the address bus and the control bus in the CPU (2 Marks)

.....

.....

.....

4. State any two disadvantages of printing documents using thermal printers (2 Marks)

.....

.....

.....

5. State one advantage of storing data on an optical disk over the magnetic disk (1 Mark)

.....

.....

6. a. Define the term network topology (1 Mark)

.....

.....

- b. Distinguish between a logical and physical topology (2 Marks)

.....

.....

.....

.....

.....

7. a. Distinguish between a web portal and a blog (2 Marks)

.....

.....

.....

.....

b. List four components of an e-mail header (2 Marks)

.....

.....

.....

.....

8. The tables below were extracted from jobu’s enterprise database. Use them to answer the questions that follows

CUSTOMER TABLE				
CUSTOMER ID	ID NUMBER	NAME	ADDRESS	TOWN

ORDER TABLE					
ORDER ID	CUSTOMER ID	ORDER DATE	PARTICULARS	QUANTITY	UNIT COST

a. Identify the most appropriate primary keys in both tables (1 Mark)

.....

.....

.....

b. Identify a candidate key in any of the tables (1 Mark)

.....

.....

c. Describe the relationship formed between the two tables (2 Marks)

.....

.....

.....

.....

d. Write a function that would be used in a query to display the delivery date; given that all deliveries are made three days after the order date. Name the query field “Delivery_Date” (2 Marks)

.....

.....

9. Explain the circumstances that may lead to use of crop tool in a word processing document. (2 Marks)

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

10. State two advantages of using templates when creating documents in word processing (2 Marks)

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

11. The emergence of Gen-Z popular ‘maandamano’ has led to many organizations in major cities in Kenya to embrace teleworking approach

a) State the meaning of the term teleworking (1 Mark)

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

b) State two benefits that the organization gained by using this approach (2 Marks)

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

12. (a) (i) State the meaning of each of the following terms used in spreadsheets (2 Marks)

Value

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

Chart

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

(ii) A certain formula was typed in a cell within a worksheet. Upon execution the cell displayed the error #NULL. State the meaning of the error (1 Mark)

.....
.....

13. State the hardware technological differences between the second generation and the third generation computers. (2 Marks)

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

14. State three ways of transforming a picture embedded in a Desktop Publishing programme in order to fit in a designated space on a document. (3 Marks)

.....

.....

.....

.....

- b) State two application areas of a desktop publishing software. (2 Marks)

.....

.....

15. List two duties performed by each of the following personnel (3 Marks)

i. System analyst

.....

.....

.....

ii) Network administrator

.....

.....

.....

iii) Computer trainer

.....

.....

.....

SECTION B

Answer question 16 and any other three questions

16. a. State two functions of a language translator in program development (2 Marks)

.....

.....

.....

- b. In a game, a player is given three rounds of picking a red, blue or yellow ball from a basket three times per round. The player is considered a winner by picking at least two blue balls in the round. Write a program pseudocode and flowchart to prompt a player to choose a ball then display

- The ball color selected
- The ball color combination for each round
- Total number of wins and losses in all the three rounds

Pseudocode (6 Marks)

17. An information system is a critical tool of success in any organization. For this reason, many organization set aside a lot of resources in supporting their information system.

a. Define the term information system (2 Marks)

.....

.....

.....

.....

.....

.....

b. Different methodologies are used to develop systems depending on the nature of the system and the organization.

i. Define the term methodology as used in systems development (2 Marks)

.....

.....

.....

.....

ii. State any two advantages of a prototype during system development (2 Marks)

.....

.....

.....

.....

iii. List any four tools that can be used to design a system (2 Marks)

.....

.....

.....

.....

.....

.....

iv. Identify the system flow chart symbol shown in the diagram below and state its function



Symbol (1 Mark)

.....

.....

Function (1 Mark)

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

c. List the order in which the operating system organizes information from top to bottom (2 Marks)

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

d. State the purpose of a disk diagnostic utility provided by the operating system (1 Mark)

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

e. As John was booting his computer, the process was terminated before completion with an error message “Missing Operating System”, identify the reason for the error and its solution.

Reason (1 Mark)

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

Solution (1 Mark)

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

18. (a)Mention three factors to consider when choosing a file organization method (3 Marks)

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

b) Define the term Data integrity (1 Mark)

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

(c) State three ways of minimizing threats to data integrity. (3 Marks)

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

d) Briefly describe the following data processing modes (3 Marks)

i) Online processing.

.....

.....

.....

ii) Real-time processing.

.....

.....

.....

iii) Multi-programming

.....

.....

.....

e) Linda does not understand why computers are said to be Automatic at the same time they have No Intelligent Quotient (IQ). Explain to her the observation concepts. (2 Marks)

.....

.....

.....

f) Give three reasons to justify why many computer users today prefer saving their documents in the google drive (3 Marks)

.....

.....

.....

19. a) State three standard coding schemes used in computing (3 Marks)

.....

.....

.....

b) Convert the following numbers

i) 111.010_2 to decimal (3 Marks)

.....

.....

.....

ii) 13.875_{10} to binary (3 Marks)

.....

.....

.....

.....
.....
.....
.....
c) i) Give three reasons why primary storage devices are not used for secondary storage (3 Marks)

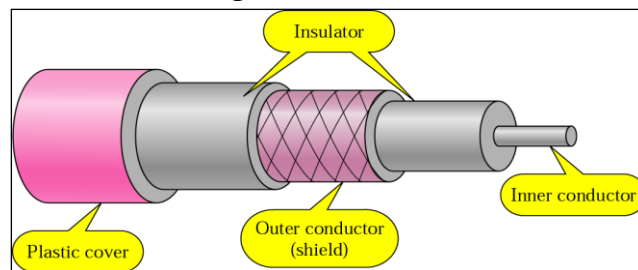
.....
.....
.....
.....
ii) A computer teacher put a rule that flash disks should not be used in the computer laboratory (1 Mark)

a. Give a reason for the rule

.....
.....
.....
.....
(b) State two other alternatives that can be used to achieve the same objective

.....
.....
.....
.....
20. The development of internet has succeeded in reducing the world into a global village
a. State any two benefits of networking (2 Marks)

.....
.....
.....
.....
b. Identify the cable in the diagram below (1 Mark)



.....
.....
.....
.....
c. State any two reasons for making it a better choice for a backbone in a bus topology network (2 Marks)

d. State three components of satellite communication (3 Marks)

e. Distinguish between a switch and a router (2 Marks)

f. Explain the following principles in relation to data integrity principle (2 Marks)

i. Data integrity

ii. Availability

g. John was promoted at work but James was not happy about it, he therefore decided to steal and destroy critical information from John's computer.

i. Identify the threat committed by James (1 Mark)

ii. State two ways John could have avoided the threat mentioned in (i) above (2 Marks)

GOLDLITE ONLINE SUPPLIES
Kenya Certificate of Secondary Education
KCSE TOP SCHOOLS TRIAL SERIES 2025

Name Admission number

Candidate's Signature.....Date.....

STAREHE GIRLS CENTER SCHOOL TRIAL EXAMS

451/1

COMPUTER STUDIES

PAPER 1

INSTRUCTION TO CANDIDATES

- a) *Write your name and index number in the space provided above.*
- b) *Sign and write the date of examination in the spaces provided above.*
- c) *This paper consists of **two** sections **A** and **B**.*
- d) *Answer **all** the questions in section **A**.*
- e) *Answer question **16** (Compulsory) and any other **three** questions from section **B**.*
- f) *All answers should be written in the space provided in the question paper.*
- g) ***Do not remove any pages from this booklet.***
- h) ***Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.***
- i) ***Candidates should answer the questions in English.***

[CONTACT US ON 0724351706/0726960003](tel:0724351706/0726960003)

[FOR MORE PAPERS FOR ALL SUBJECTS AND MARKING SCHEMES](#)

FOR EXAMINERS USE ONLY

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

SECTION A (40 MARKS)

1. What is meant by

a) Analogue data (4mks)

.....
.....

b) Digital data

.....
.....

2. Distinguish between transcription and transposition types of errors and give an

example of each (4mks)

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

3. a) what are peripheral devices? (1mk)

.....
.....

b) Give two examples of peripheral devices (1mk)

.....
.....

4 a) What meant by the term user-friendly as used in software development? (1mk)

.....
.....

b) Distinguish between the terms single-tasking and multi-user as used in

operating systems (2mks)

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

5. What actions should be taken in case of a fire outbreak in the computer laboratory? (4mks)

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

6 a) What is an Internet Service Provider? (1mk)

.....
.....

b) An employee in a business company is charged with the responsibility of putting the company advertisements on the Internet.

i) State the professional title of the employee. (1mk)

ii) Give an example of software used by this employee to carry out the above task. (1mk)

7. Differentiate between COM ports and LPT ports (2mks)

8. Explain two ways in which ICT can enhance commerce. (2mks)

9. Explain the following software terms:

a) Portability (1mk)

b) Modularity (1mk)

10. a) State two application areas of a desktop publishing software. (2mks)

b) Explain the following graphic terms:

i) Rotate (1mk)

(ii) Crop (1mk)

12. a) List two arithmetic operations that can be performed on a row of numeric data in a word processing table. (1mk)

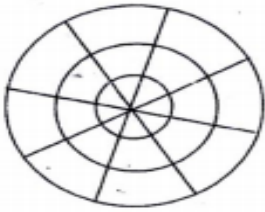
b) In each case of (a) above, write the expression used. (2mks)

13. List two methods of gathering information during system development process. (2mks)

14. Name three types of optical disks.

(3mks)

15. The diagram below shows a formatted plate surface of a storage disk.



Shade and label:

(a) one sector

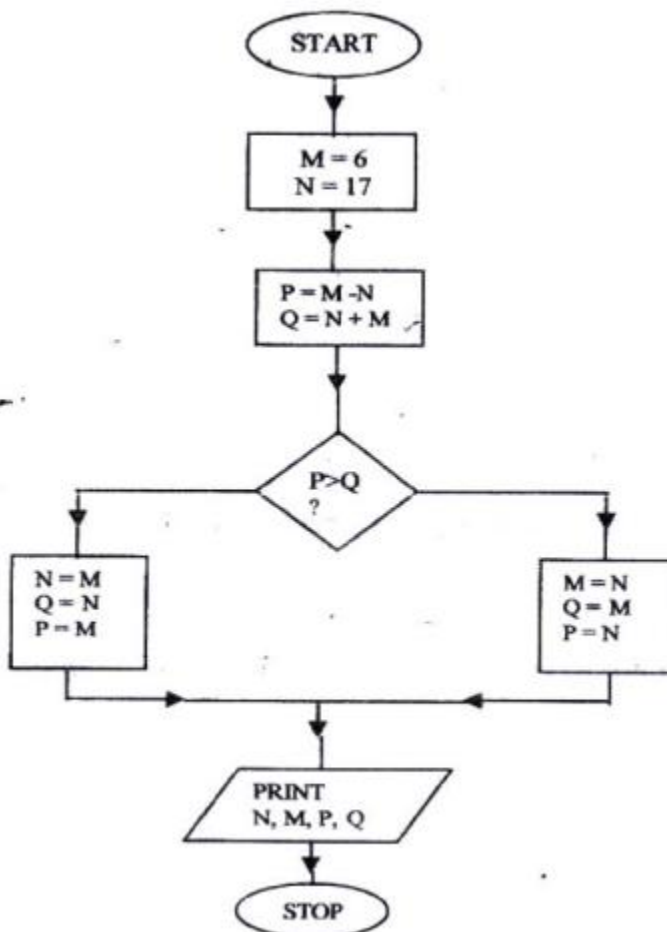
(1mk)

b) One block

SECTION B (60 MKS)

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

16. Study the flowchart below and answer the questions that follow



i) Name the control structures used in the flowchart (2mks)
.....

ii) Determine the values of M, N, P and Q. (4 mks)
M..... N.....
P Q

iii) Write the pseudo code for the flowchart (7mks)

b) List two functions of an assembler (2mks)
.....
.....

17. (a) Distinguish between the following sets of terms as used in spreadsheets. (2mks)

i) Worksheet and workbook
.....
.....
.....

ii) Filtering and sorting
.....
.....
.....

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

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	ALLOWANCES	GROSS PAY	TAX DEDUCTIONS	NET PAY
2	KORIR	12	1500					
3	ATIENO	28	650					
4	MUTISO	26	450					
5	ASHA	30	900					
6	MAINA	18	350					
7	WANJIKU	22.5	250					
8	WANYAMA	24.5	250					
9	OLEANE	17	180					
10	MOSET	33	700					
	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;

(5mks)

(i)D2

.....

ii) E4

.....

(iii)F10

.....

(iv)G7

.....

v) H5

.....

d) i) State three ways of moving round the page in a Desktop Publishing window.

(3mks)

.....

.....

.....

ii) State two ways on how information & Communication Technology (ICT) can be used to reduce the spread of HIV/AIDS (2mks)

.....
.....

18.a) Describe the following terms with reference to security of data: (2mk)

(i) Log files

.....
.....

(ii) Firewalls

.....
.....

b) A student database comprises of students' details table and fees received table as shown below:

Students' details table

Surname
Middle Name
First Name
Admission Number
Course

Fees Received table

Date
Amount
Receipt No.

(i) State the primary key field for each table. (2mks)

.....
.....

(ii) State the field, which should serve as the linking field for the two tables

.....

c) Describe the following terms with respect to computer security:

i) Logic bombs (2mks)

.....
.....

(ii) Physical security (2mks)

.....
.....
(iii) Tapping (2mks)

.....
.....
d) List three functions of antivirus software. (3mks)

.....
.....
19. Define the following web related terms:

i) Web browser (1mk)

.....
.....
(ii) Hyperlink (1mk)

.....
.....
(iii) Hypertext document (1mk)

.....
.....
b) List three activities performed on the web (3mks)

.....
.....
c) Below is an email address:

ggitau @moest. edu.ke
↓ ↓ ↓
A B C

Name the parts labeled:

i) A

.....
ii) B

.....
iii) C

20. A computer C directory has folders for form 1, form 2, Form 3 and form 4. Each class has student’s folders labeled according to their number. The students create their own folder for the subject the are studying based on the table shown below

Form 1	Form 2	Form 3	Form 4
OS	SP	Pr.	ADB
WP	DTP DB	Internet	

a) Assuming there is one student per class, draw the corresponding directory tree structure. (6mks)

b) i) a form four student wants to create a folder to store her project. State the path for that project folder. (2 mks)

.....

(ii)Suggest how the student can ensure that

- 1. Work is not lost in case the hard disk fails. (1mk)

.....

- 2. The project is not copied by other students. (1mk)

.....

c) i). Other than I/O devices, list other three devices under the control of the operating system. (3mks)

.....

ii) Explain any one of the devices named in C (i) above (1mk)

.....

d) Define the term trouble shooting (1mk)

.....

c) State and explain three ways that can be followed to replace the current system (6mks)

.....

GOLDLITE ONLINE SUPPLIES
Kenya Certificate of Secondary Education
KCSE TOP SCHOOLS TRIAL SERIES 2025

Name Admission number

Candidate's Signature.....Date.....

ASUMBI GIRLS

451/1

COMPUTER STUDIES

PAPER 1

INSTRUCTION TO CANDIDATES

- a) Write your name and index number in the space provided above.
- b) Sign and write the date of examination in the spaces provided above.
- c) This paper consists of **two** sections **A** and **B**.
- d) Answer **all** the questions in section **A**.
- e) Answer question **16** (Compulsory) and any other **three** questions from section **B**.
- f) All answers should be written in the space provided in the question paper.
- g) **Do not remove any pages from this booklet.**
- h) **Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.**
- i) **Candidates should answer the questions in English.**

For Examiner's Use Only

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

CONTACT US ON 0724351706/0726960003

FOR MORE PAPERS FOR ALL SUBJECTS AND MARKING SCHEMES

ANSWER ALL QUESTIONS IN THIS SECTION.

1. a) Define the term distributed processing (2 marks)

.....

.....

.....

b) Differentiate the term in 1(a) above from centralized processing (2 marks)

.....

.....

.....

2. Outline **two** disadvantages of serial file organization (2 marks)

.....

.....

.....

3. State any **four** criteria for choosing an operating system (4 marks)

.....

.....

.....

.....

.....

4. Give the acronym of the following and explain briefly

i) BIOS (2 marks)

.....

.....

.....

ii) HTML (2 marks)

.....

.....

.....

5. Differentiate between the following terms (3 marks)

Interpreters	Compilers
i)	i)
ii)	ii)

6. A student in form three came across the mnemonics below when he was learning about the assembly programming language. Describe what they mean. (2 marks)

i) MOV AX, 15

.....

.....

.....

ii) SUB AX, 10

.....

.....

.....

7. Explain why a computer room must (3 marks)

a) have good ergonomics

.....

.....

.....

b) be well ventilated

.....

.....

.....

c) have a non-water based fire extinguishers

.....

.....

.....

8. Explain the term hot-swapping as used in drives (1 mark)

.....

.....

.....

9. a) What is a warranty? (1 mark)

.....

.....

.....

b) State **three** qualities of a good warranty (3 marks)

.....

.....

.....

.....

10. State **two** advantages of NTFS over FAT (2 marks)

.....

.....

.....

11. What is a relationship database? (2 marks)

.....

.....

.....

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

i) Point –to-point

.....

.....

.....

ii) Broadcast

.....

.....

.....

13. Give any **two** types of data entries that may be input into a worksheet cell (2 marks)

.....

.....

.....

.....

14. Give any **two** function of a system analyst. (2 marks)

.....

.....

.....

.....

15. List any **three** program control structures used in programming (3 marks)

.....

.....

.....

.....
.....

SECTION B (60MKS)

16. (a) What is meant by each of the following terms:

(i) Pseudo code **(1½ marks)**

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

(ii) Flowchart **(1½ marks)**

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

b) A program is required to list the first 1000 numbers in the series 2, 4, 6, 8, 10 Draw a flowchart and write a program that can be carry out this task **(12 marks)**

17. a) What is meant by data communication in a computer network? **(2 marks)**

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

b) State what is meant by each of the following transmission media and give one advantage and one disadvantage for each .

i) Twisted pair cables **(3 marks)**

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

ii) Coaxial cables **(3 marks)**

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

iii) Optic fibre cables **(3 marks)**

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

c) List **four** network elements in a location area network. **(4 marks)**

18. a) One of the functions of an operating system is job scheduling. Explain what is mean by job scheduling. (1 mark)

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

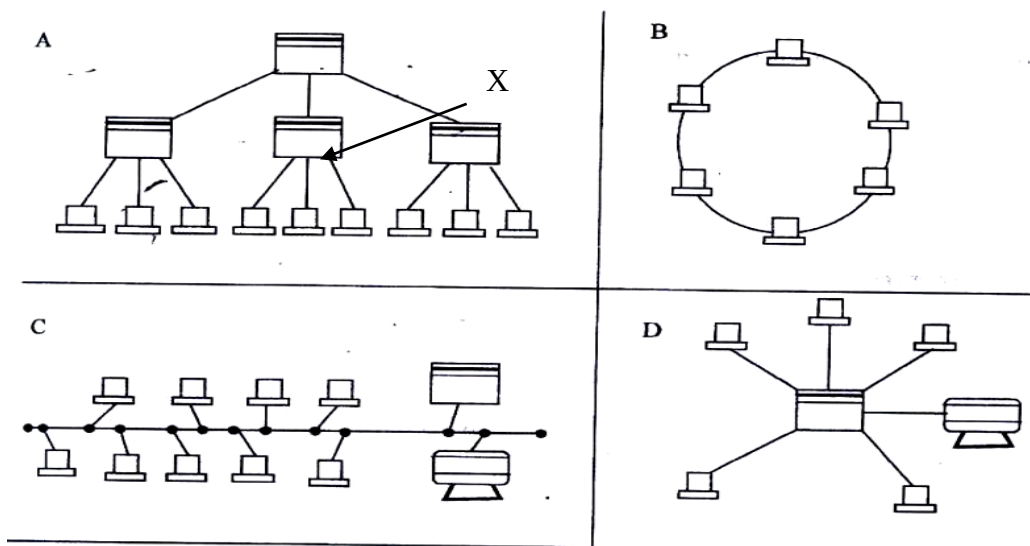
c) Describe the following categories of software:

i) Firmware (1 mark)

ii) Proprietary software (1 mark)

d) A new company XYZ intends to go into the business of desktop publishing. Advise the company on three computer hardware system specification features to consider as a measure of enhancing performance. (6 marks)

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



i)  Server  Terminal  Printer

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

Name

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

.....
.....
.....
iii) List two problems associated with network topology B. (2 Marks)

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

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

.....
.....
.....
c) Describe the following network services and identify their applications. (2 Marks)

i) Voice mail

.....
.....
.....
ii) Video conferencing. (2 Marks)

GOLDLITE ONLINE SUPPLIES
Kenya Certificate of Secondary Education
KCSE TOP SCHOOLS TRIAL SERIES 2025

Name Admission number

Candidate's Signature.....Date.....

ALLIANCE BOYS HIGH SCHOOL TRIAL EXAMS

451/1

COMPUTER STUDIES

PAPER 1

INSTRUCTION TO CANDIDATES

- a) Write your name and index number in the space provided above.
- b) Sign and write the date of examination in the spaces provided above.
- c) This paper consists of **two** sections **A** and **B**.
- d) Answer **all** the questions in section **A**.
- e) Answer question **16** (Compulsory) and any other **three** questions from section **B**.
- f) All answers should be written in the space provided in the question paper.
- g) **Do not remove any pages from this booklet.**
- h) **Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.**
- i) **Candidates should answer the questions in English.**

For Examiner's Use Only		
Section	Question Number	Candidate's Score
A	1-15	
	16	
	17	
	18	
	19	
	20	
Total Score		

CONTACT US ON 0724351706/0726960003

FOR MORE PAPERS FOR ALL SUBJECTS AND MARKING SCHEMES

SECTION A (40 MARKS)

ANSWER ALL QUESTIONS IN THIS SECTION

1. Differentiate between cold booting and warm booting in computing (2mks)

.....

.....

.....

2. Define parallel processing (1mk)

.....

.....

3. (a) Mention any TWO reasons why command-based operating systems are not common in today's business computer systems. (2mks)

.....

.....

.....

- (b) Explain any THREE functions of an operating system with respect to memory management (3mks)

.....

.....

.....

.....

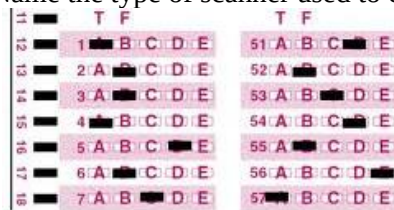
4. Differentiate between partitioning and formatting as used in disk management (2mks)

.....

.....

.....

5. Name the type of scanner used to capture data from the following document format below (1mk)



.....

.....

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

.....

.....

7. Mention any TWO features that are considered before buying a main memory module. (2mks)

8. A technician recommended a computer in the principal's office needs upgrading of the CPU. State any TWO reasons that may have necessitated the upgrading of the CPU. (2mks)

9. State TWO reasons why secondary storage is preferred to main memory in data storage. (2mks)

10. (a) State ONE advantage of relational database model over flat files (1mk)

(b) State TWO uses of primary keys in a database (2mks)

(c) A database requires data to be defined by assigning data types to fields for purposes of consistent storage. Describe any FOUR data types that can be allowed in MsAccess. (4mks)

(d) Define the term macro as used in databases (1mk)

11. State any ONE reason why USB interface cables are widely used in computing devices (1mk)

12. A company is considering replacing some of its software, including its word processing package, and to acquire an integrated software package. State **TWO** advantages for the company in using integrated software rather than separate packages. (2mks)

.....
.....
.....
13. (a) State TWO types of DTP software (2mks)

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

.....
.....
.....
14. (a) Explain the meaning of “what if analysis” in spreadsheets (2mks)

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

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

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

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

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

(i) Folder

.....
.....
(ii) Drive

.....
.....
SECTION B (60 MARKS)

ANSWER QUESTION 16 AND ANY OTHER THREE QUESTIONS FROM THIS SECTION

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

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

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

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

i. Pseudocode (5mks)

ii. Flowchart

(7mks)

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

.....

.....

.....

.....

.....

.....

.....

.....

(b) Distinguish between the following terms as used in system development

(4mks)

i. Hard system and soft system

.....

.....

.....

.....

ii. Operational feasibility and technical feasibility

.....

.....

.....

.....

(c) State THREE ways in which organizations manage system entropy (3mks)

.....

.....

.....

.....

(d) Explain any TWO reasons for system maintenance (1mk)

.....

.....

.....

.....

(e) Briefly explain THREE ways in which computers can be used in motor vehicle manufacturing companies (3mks)

.....

.....

.....

.....

.....

.....

18. (a) Distinguish between the following terms as used in data communication (4mks)

i. Guided transmission and unguided transmission

.....

.....

.....

.....

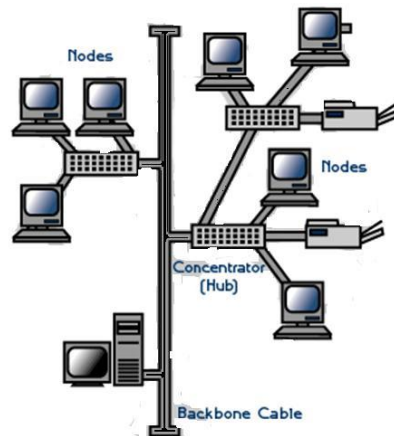
ii. Multiplexing and demultiplexing

.....

.....

.....

.....



.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

(ii) Webportals

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

19. (a) (i)List and explain the THREE types of errors that can occur during data collection stage of data processing cycle (3mks)

(ii)Distinguish between master file and transaction file (2mks)

(iii) Define real time processing (1mk)

(iv) Explain a situation where the batch processing would be appropriate (1mk)

(b) Using twos complement, perform the following operation and give your answer in decimal notation

- $777_8 - 25_{10}$ (4mks)

(c) Solve $AC_{16} + 101_2 = X_2$ (2mks)

.....

.....

.....

.....

.....

.....

.....

(d) Convert binary number 11010110.1001₂ into octal number. (2mks)

.....

.....

.....

20. (a) State any TWO negative effects of introducing robots in a manufacturing plant (2mks)

.....

.....

.....

.....

(b) State THREE advantages of using computers (3mks)

.....

.....

.....

.....

.....

(c) Name THREE types of special purpose memories used in a computer (3mks)

.....

.....

.....

.....

(d) Explain the purpose of the system clock (2mks)

.....

.....

.....

(e) (i) In word processing, differentiate between text wrap and word wrap (2mks)

.....

.....

.....

.....

(ii) List any THREE types of section breaks used in word. (3mks)

.....

.....

Name Admission number

Candidate's Signature.....Date.....

FRIENDS SCHOOL KAMUSINGA

451/1

COMPUTER STUDIES**PAPER 1****INSTRUCTION TO CANDIDATES**

- a) Write your name and index number in the space provided above.
- b) Sign and write the date of examination in the spaces provided above.
- c) This paper consists of **two** sections **A** and **B**.
- d) Answer **all** the questions in section **A**.
- e) Answer question **16** (Compulsory) and any other **three** questions from section **B**.
- f) All answers should be written in the space provided in the question paper.
- g) **Do not remove any pages from this booklet.**
- h) **Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.**
- i) **Candidates should answer the questions in English.**

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

CONTACT US ON 0724351706/0726960003**FOR MORE PAPERS FOR ALL SUBJECTS AND MARKING SCHEMES****Section A (40 Marks)**

Answer ALL Questions from this section

- 1) State three reasons why it is difficult to control, detect and prevent computer crimes (3marks)

.....

.....

.....

- 2) Mr. Kala wants to buy a printer to use in his automobile workshop for printing sales orders in duplicates. He has approached you for advice. What printer should he buy? (1 Mark)

Give a reason for your answer. (1mark)

.....

.....

.....

- 3) Last year 2020 when corona virus was declared a pandemic internationally most companies allowed employees to telework or work at home and communicate with the office using the Internet. List the hardware, software and services required to access and use the Internet. (3 Marks)

.....

.....

.....

- 4) Using a well labelled diagram, describe the fetch and execute cycle. (3 Marks)

.....

.....

.....

- 5) Ventilation is an important practice in the computer lab because it enhances proper circulation of air. Outline **three** ways in which air is regulated in the computer room. (3 marks)

.....

.....

.....

- 6) Differentiate between COM ports and LPT ports. (2 marks)

.....

.....

.....

- 7) State any two advantages of the artificial intelligence. (2 Marks)

.....

.....

.....

- 8) (a) The word COM appears several times in an essay. Jane would like to change the word to COMPUTER. Advise her on how she can accomplish this task using a word processor.(2 Marks)

.....

.....

.....

- 9) Anita was working on her computer studies project. She was worried of the media to use for storing her data. She settled on a media that used serial file organization. How are files organized on a storage medium using this method? (1 mark)

.....

.....

.....

- (b) List two advantages offered by this type of file organization. (2marks)

.....

.....

.....

- 10) (a) Rose wants to send an email to Jack. Explain two items that must be present for the mail to be sent. (2 Marks)

.....

.....

- (b) (i) Define the term network protocol (1 Mark)

.....

.....

- (ii) Name any **two** examples of network protocols (1 Mark)

.....

.....

- 11) (a) What is the importance of layering in DTP? (1 Mark)

.....

.....

- (b) Distinguish between column guides and margin guides as used in DTP. (2 Marks)

.....

.....

.....

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

	A	B	C	D	E	F
1						
2	MOKASA MIXED HIGH SCHOOL					
3	ADM. NO	NAME	MATHS	ENGLIS H	AVERAG E	RANK
4	1001	Akinyi	78	85		
5	1002	Kamau	89	77		
6	1003	Leila	45	46		
7	1004	Taita	67	69		
8	1005	Mosomtan y	98	67		
9	Highest Score					

10	Lowest Score					
11	Average Score					

(a) Write a formula that would be entered in cell E4 to compute the average score for Akinyi.
(1 Mark)

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

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

.....
13) The manager of a company wants to improve the security of the computer network. She has decided to use authentication techniques so that employees can identify themselves to the system. Name **two** authentication techniques and describe how each technique would help keep the data more secure.
(3 Marks)

.....
14) Mary who works as a systems analyst for JeroKin investments has produced documentation for a newly developed system. State three reasons why both user and technical documentation are needed.
(3 Marks)

.....
15) Environmentalists plan to test a fast flowing river for pollution. State two advantages of using a computer to do this rather than doing it manually.
(2 Marks)

SECTION B (60 MKS)

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

16. To maintain a strategic fit Safaricom is introducing a tariff called the mega tariff that will lower costs to Safaricom to Safaricom calls and calls to other networks. Calls to Safaricom networks will be charged according to the time of the day as listed below:
- Between 8am to 12 noon – 6 Ksh
 - Between 12 noon to 2pm-0.8 Kshs
 - Between 6 to 1 am -4Kshs
 - between 1 am t 8am- 1Kshs

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

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

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

- b) Design a flowchart for the pseudo code in 16(a) above (7mks)

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

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

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

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

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

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

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

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

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

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

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

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

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

.....

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

b) Convert 11011011111.1111_2 to:

i) Octal (2marks)

ii) Hexadecimal (2marks)

iii) Decimal (2marks)

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

.....
.....

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

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

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

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

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

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

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

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

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

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

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

GOLDLITE ONLINE SUPPLIES
Kenya Certificate of Secondary Education
KCSE TOP SCHOOLS TRIAL SERIES 2025

Name Admission number
Candidate's Signature.....Date.....

KENYA HIGH SCHOOL TRIAL SERIES

451/1

COMPUTER STUDIES

PAPER 1

INSTRUCTION TO CANDIDATES

- a) Write your name and index number in the space provided above.
- b) Sign and write the date of examination in the spaces provided above.
- c) This paper consists of **two** sections **A** and **B**.
- d) Answer **all** the questions in section **A**.
- e) Answer question **16** (Compulsory) and any other **three** questions from section **B**.
- f) All answers should be written in the space provided in the question paper.
- g) **Do not remove any pages from this booklet.**
- h) **Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.**
- i) **Candidates should answer the questions in English.**

For Examiner's Use Only

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

CONTACT US ON 0724351706/0726960003

FOR MORE PAPERS FOR ALL SUBJECTS AND MARKING SCHEMES

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

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

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

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

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

	A	B	C	D	E	F	G	H	I
1	Name	CAT1	CAT2	CAT TOTAL	EXAM	TOTAL MARKS	POSITION	GRADE	REMARK
2	Mark Jama	14	06	20	56	76	1		
3	Caleb Wekeza	13	08	21	34	55	6		
4	Kanini Mulue	10	04	14	59	73	3		
5	Justine Melanie	11	07	18	57	75	2		
6	Julia Wahome	06	09	15	48	63	5		
7	Austin Kilome	08	07	15	50	65	4		

Hints

CAT1 is out 15, CAT2 is out 15 and Exam is out 70

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

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

3

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

Total Marks	Remark
0 - 49	Fail
50 - 59	Above Average
60 - 69	Fair

70 - 79	Good
80 - 100	Excellent

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

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

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

(b) Prt sc

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

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

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

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

4

11. A computer operator was working with a computer using windows operating system. After sometimes he started experiencing the following problems

- Abnormal restarting
- Computer failing to load the operating system
- Computer hangs
- Computer displaying Fatal Exception error on the screen

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

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

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

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

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

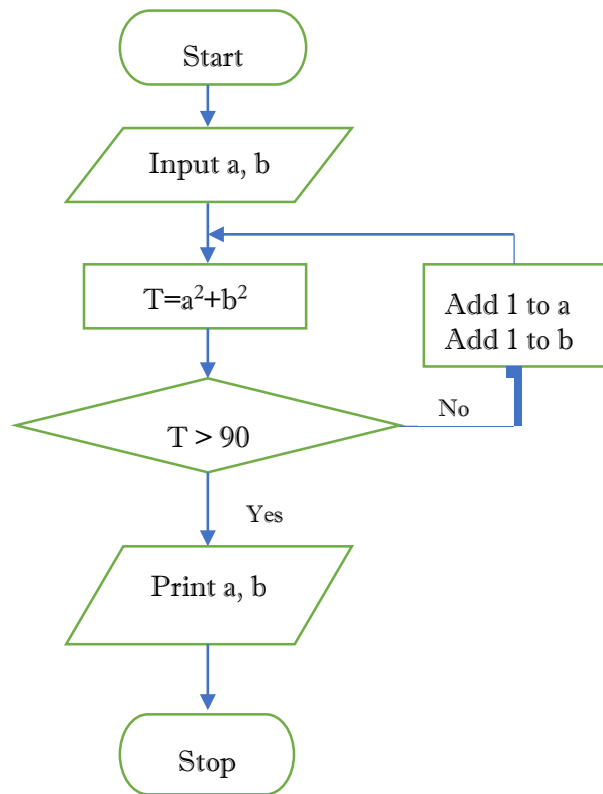
SECTION B (60 MARKS)

16.

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

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

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



6

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

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

17.

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

(c) Convert the following numbers to binary number

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

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

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

Table Name: Product

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

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

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

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

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

18.

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

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

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

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

(i) Subscript

(ii) Drop cap

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

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

19.

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

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

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

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

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

20.

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

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

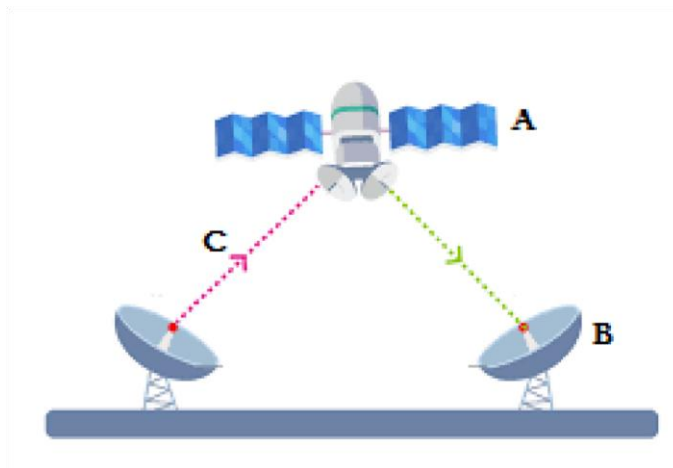
(ii) WhatsApp chat

(iii) Phone conversation

(iv) Walkie talkie conversation

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

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



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

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

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

GOLDLITE ONLINE SUPPLIES
Kenya Certificate of Secondary Education
KCSE TOP SCHOOLS TRIAL SERIES 2025

Name Admission number

Candidate's Signature.....Date.....

MANG’U HIGH SCHOOL

451/1

COMPUTER STUDIES

PAPER 1

INSTRUCTION TO CANDIDATES

- a) Write your name and index number in the space provided above.
- b) Sign and write the date of examination in the spaces provided above.
- c) This paper consists of **two** sections **A** and **B**.
- d) Answer **all** the questions in section **A**.
- e) Answer question **16** (Compulsory) and any other **three** questions from section **B**.
- f) All answers should be written in the space provided in the question paper.
- g) **Do not remove any pages from this booklet.**
- h) **Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.**
- i) **Candidates should answer the questions in English.**

For Examiner’s Use Only		
Section	Question Number	Candidate’s Score
A	1-15	
	16	
	17	
	18	
	19	
	20	
Total Score		

CONTACT US ON 0724351706/0726960003
FOR MORE PAPERS FOR ALL SUBJECTS AND MARKING SCHEMES

SECTION A (40 marks)

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

1. With the aid of a program flow-chart, explain the WHILE DO interaction construction. **(3 marks)**

.....

.....

.....

2. Name **two** types of secondary storage devices used in a computer giving an example of each. **(4 marks)**

.....

.....

.....

3. Write the following abbreviations in full. **(3 marks)**

i. BCD

.....

.....

ii. ASCII

.....

.....

iii. EBDIC

.....

.....

4. (a) Explain what is meant by batch processing? **(2 marks)**

.....

.....

.....

(b) Give **one** advantage and one disadvantage of batch processing. **(2 marks)**

.....

.....

5. State **three** data representation codes used in computers. **(3 marks)**

.....

.....

.....

6. Differentiate between machine language and Assembly language. **(2 marks)**

.....

.....

.....

7. What is meant by the term “dry run” as used in program development?

(2 marks)

.....

.....

.....

8. The cells K3 to K10 of a worksheet contain remarks on students' performance such as excellent, very good, good, fair, and fail depending on the average mark. Write a formula that can be used to count all students who have the remark "very good". (2 marks)

9. What actions should be taken in case of a fire outbreak in the computer laboratory? (4 marks)

10. What is an Internet Service Provider? (1 marks)

11. List **four** ways of acquiring software in an organisation. (2 marks)

12. Using **six** bits, find the two's complement of -23_{10} (4 marks)

13. Define the term data integrity. (2 marks)

14. List **four** types of publications that can be designed using desktop publishing software. (2 marks)

15. Write an algorithm to compute the area of a triangle. (2 marks)

SECTION B (40 marks)

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

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

$$X = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a} \quad \text{and } a \neq 0$$

- (a) Draw a flow chart to compute the roots of the equation. (10 marks)

(b) Using the flow chat write a program that will compute the roots and if $b^2 - 4ac$ is negative, the program should display the message “NEGATIVE”
(5 marks)

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

.....
.....

(c) Explain the difference between data privacy and data security. (4 marks)

.....
.....

(c) State **two** operational methods of an organisation insuring the security of data. (2 marks)

.....
.....

(d) Explain the use of computers in health care. (6 marks)

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

18. (a) (i) Define normalization (2marks)

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

(ii) State **three** objectives of normalization (3 marks)

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

(b)(i) What is a distributed system? (3 marks)

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

(ii) State any **three** advantages of a distributed system (3 marks)

.....

.....
.....
.....
(d) State any **four** criteria for choosing an operating system (4 marks)

19. An NGO has donated 20 brand new computers to your school. As a computer student you have been requested to advice on the type of operating system to be used by providing answers to the following questions.

(a) What is an operating system? (1 mark)

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

(b) State and explain any **two** types of operating systems. (6 marks)

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

(c) Briefly explain any **four** functions of an operating system. (8 marks)

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

20. (a) What is a computer network topology? (2 marks)

.....
.....

(b) Using appropriate diagrams, Show any **three** computer network topologies. (9 marks)

.....
.....

(c) Briefly explain **two** reasons why organisations need to network their computers. (4 marks)

.....
.....

GOLDLITE ONLINE SUPPLIES
Kenya Certificate of Secondary Education
KCSE TOP SCHOOLS TRIAL SERIES 2025

Name Admission number

Candidate's Signature.....Date.....

MARANDA SCHOOL TRIAL EXAMS

451/1

COMPUTER STUDIES

PAPER 1

INSTRUCTION TO CANDIDATES

- a) Write your name and index number in the space provided above.*
- b) Sign and write the date of examination in the spaces provided above.*
- c) This paper consists of **two** sections **A** and **B**.*
- d) Answer **all** the questions in section **A**.*
- e) Answer question **16** (Compulsory) and any other **three** questions from section **B**.*
- f) All answers should be written in the space provided in the question paper.*
- g) **Do not remove any pages from this booklet.***
- h) Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.*
- i) Candidates should answer the questions in English.*

For Examiner's Use Only

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

SECTION A (40 marks)

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

- 1) (a) List **four** types of publications that can be designed using desktop publishing software. (2 marks)

.....

.....

.....

(b) Explain the following graphic terms:

- i) Rotate (1 mark)

.....

- ii) Crop (1 mark)

.....

- 2) List **four** input devices that capture data by way of scanning (2 marks)

.....

.....

.....

- 3) Explain the following operating system functions:

- (a) Job scheduling (1 mark)

.....

- (b) Interrupt handling (1 mark)

.....

- 4) Distinguish between a formula and a function as used in spreadsheets. (2 marks)

.....

.....

.....

- 5) State **two** reasons why it is necessary to use standard furniture in a computer laboratory (2 marks)

.....

.....

- 6) When purchasing a computer, the clock speed, RAM size, Hard disk size and monitor size are often quoted. State the unit of measuring: (2 marks)

- a) Clock speed
- b) RAM size
- c) Hard disk size
- d) Monitor size

- 7) A computer user typed the name Kajiado as Kajaido and 8726 as 8126.

- (a) State the type of each error (1 mark)

.....

.....

.....

(b) Explain how each error can be controlled (2 mark)

.....

.....

.....

8) Explain the functions performed by the following; (3 marks)

i) The control unit

.....

.....

ii) Arithmetic and logic unit

.....

.....

iii) Main memory

.....

.....

9) Some of the basic factors one should consider when purchasing a computer include; cost, warranty among others. Explain **three** factors that determine the cost of a computer.

(3marks)

.....

.....

.....

10) List **four** stages in data collection. (2 marks)

.....

.....

.....

11) (a) Name the **two** files commonly used in mail merge (1 mark)

.....

.....

b) Name and explain **two** types of drop caps. (2 marks)

.....

.....

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

.....

.....

13) Describe the following types of relationships as used in database design. (4 marks)

a) One – to – one;

.....

.....

b) One – to – many.

.....
.....
.....
14) (a) Describe the term data integrity. (2 marks)

.....
.....
.....
b) State **four** situations in which data may lose integrity (2 marks)

.....
.....
.....
15) State **two** ways in which one can create a password which cannot be easily accessed by hackers. (2 marks)

.....
.....
.....
SECTION B (60 marks)

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

16) (a) State **two** qualities of a good pseudocode. (2 marks)

.....
.....
.....
(b). Distinguish between assembler and an interpreter as used in programming. (2 marks)

.....
.....
.....
(c). Explain **two** ways that may be used to identify the existence of errors in a program. (4 marks)

.....
.....
.....
(d). Draw a programme flowchart that would accept three numbers and find their sum. If the sum is greater than 200, it adds 30 to the sum otherwise subtracts 20 from the sum. The program should then display the result. (7 marks)

.....
.....
.....
17) a) The following are some of the phases in the system development life cycle (SDLC): system analysis, system design, system implementation, system review and maintenance. State **four** activities that are carried out during 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 design and output design. State **two** considerations for each case; (4 marks)
Input design

.....
.....
Output design

.....
.....
(e) State **two** reasons why an organization may use other strategies of software acquisition other than developing their own. (2 marks)

.....
.....
18) (a) State **three** standard coding schemes used in computing and electronic systems. (3 marks)

(b) Convert the following numbers:
i) 110.101_2 to decimal; (3 marks)

ii) 12.6875_{10} to binary; (4 marks)

(c) Subtract 110.01_2 from 11001.0101_2 (2 marks)

(d) Using twos complement, perform the following binary arithmetic leaving the answer in binary notation.

$1101_2 - 100101_2$ (3 marks)

- 19)** (a) Using **two** examples, explain the term field properties as used in database design. (2 marks)

b) Below is an extract from a hospital database.

Patient No.	Name	Date registered	Amount paid	Remarks
LDK/001	Mathew Olang	04/05/08	2500.00	To go for x - ray
LDK/004	Joy Chelimo	07/06/08	1200.0	Medicine to be Ordered
LDK/008	John Kamau	09/08/08	3500.00	To be admitted for further check up
LDK/002	GaraldWasike	02/04/05	800.00	To come back for review.

- i) State with reasons the most suitable data types for the following fields: (8 marks)

I. Patient No;

.....

II. Date registered

.....

III. Amount paid

.....

IV. Remarks

.....

- ii) Which would be the most appropriate primary key field for the above table? (1 mark)

.....

- iii) What is the purpose of a primary key field in database design? (1 mark)

.....

- iv) Describe how information about patients who registered after 09/08/06 can be extracted from the database. (3 marks)

.....

.....

.....

- 20)** (a) (i) What is an information system? (1 mark)

.....

(ii) State **two** roles of an information system. (2 marks)

b) Describe the following file organisation methods:

i) Random file organization (2 marks)

ii) Sequential file organization (2 marks)

c) The following records were extracted from two files that contained student data

File A:

<u>Reg No.</u>	<u>Student Name</u>	<u>sex</u>	<u>Address</u>
3002	Christine Onyancha	F	Box 8932 Kisii
3008	John Otieno	M	Box 7222 Nairobi
3001	Amina Muthee	F	Box 1243 Butere
3015	Peter Musyoki	M	Box 6621 Nyeri

File B:

Reg. No	Fee Payments	Date of Payment
3002	1000	04/09/2011
3008	1500	03/09/2011
3001	900	02/09/2011
3015	400	21/09/2011

i) Which of the two files above represents a Transaction file? (1 mark)

ii) Give a reason for your answer in c(i) above (1 mark)

iii) Name the other type of file represented above (1 mark)

d) An airline uses an information system whereby if a passenger at station A books a plane seat, this transaction is immediately shown at stations A and B such that no other passenger can book the same seat.

i) Identify this data processing mode (1 mark)

ii) State **two** advantages and two disadvantages of this processing mode. (4 marks)

GOLDLITE ONLINE SUPPLIES
Kenya Certificate of Secondary Education
KCSE TOP SCHOOLS TRIAL SERIES 2025

Name Admission number

Candidate's Signature.....Date.....

MASENO SCHOOL

451/1

COMPUTER STUDIES

PAPER 1

Instruction to candidates

- (a) Write your name and index number in the spaces provided above
- (b) This paper consists of **two** sections **A** and **B**
- (c) Answer **ALL** questions in section **A**
- (d) Answer question 16 and any other **THREE** questions from section **B**
- (e) All answers should be written in the spaces provided on the question paper
- (f) This paper consists of **12** printed pages.
- (g) Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.

For Examiner's Use Only

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

CONTACT US ON 0724351706/0726960003

FOR MORE PAPERS FOR ALL SUBJECTS AND MARKING SCHEMES

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

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

.....

.....

.....

.....

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

.....

.....

.....

.....

3. List two types of job opportunities that are available in the field of computer hardware (2marks)

.....

.....

.....

.....

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

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

Hints

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

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

.....

.....

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

.....

.....

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

Total Marks	Remark
0 - 49	Fail
50 - 59	Above Average
60 - 69	Fair
70 - 79	Good
80 - 100	Excellent

.....

.....

.....

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

.....

.....

.....

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

.....

.....

.....

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

(a) Esc

.....

.....

(b) Prt sc

.....

.....

8. Explain the following terms with references to algorithm

(a) Definiteness

(2marks)

.....

.....

(b) Finiteness

(2marks)

.....

.....

9. Mention two ICT related courses offered in Kenyan universities at undergraduate level

(2marks)

.....

.....

10. What is flaming

(2marks)

.....

.....

11. A Principal of a school wishes his school to have an internet connection in a bid to improve its service delivery. Mention three internet connectivity requirements that must be present to enable the connection.

(3marks)

.....

.....

.....

.....

12. Identify two limitations of traditional approach to system development

(2marks)

.....

.....

.....

.....

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

.....

.....

.....

.....

.....

.....

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

.....

.....

.....

.....

15. Describe three layout guides available in DTP that assist a user to place an object in a preferred position

(3marks)

.....

.....

.....

.....

SECTION B (60 MARKS)

16. a) State three features of a compiler

(3marks)

.....

.....

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

(4marks)

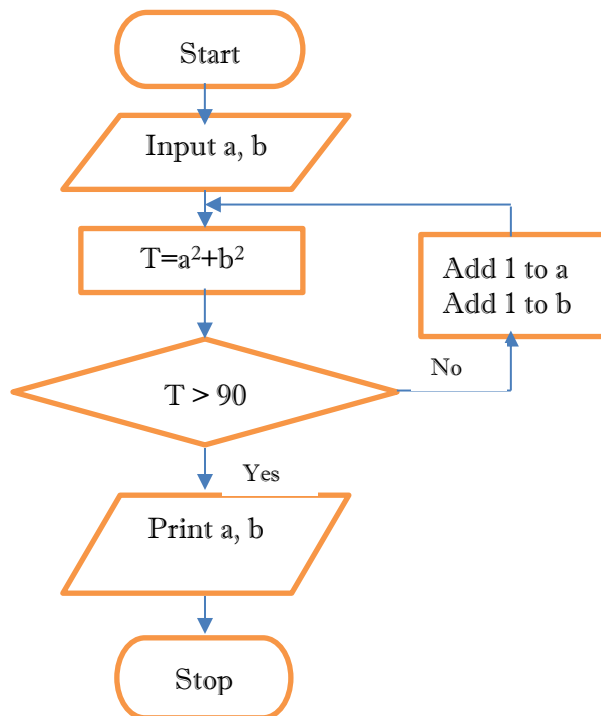
.....

.....

.....

.....

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



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

(3marks)

.....

.....

.....

.....

.....

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

(5marks)

17. a) Briefly describe the three main coding schemes

(3marks)

.....

.....

.....

b) Convert the following numbers to binary number

(i) B2.AAH

(3marks)

.....

.....

.....

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

(3marks)

.....

.....

.....

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

Table Name: Product

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

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

(2marks)

.....

.....

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

(2marks)

.....

.....

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

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

.....

.....

.....

.....

.....

18. a) Describe four services available in the internet that support business (4marks)

.....

.....

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

.....

.....

.....

.....

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

.....

.....

.....

.....

d) Briefly describe the following features of word processor

(2marks)

(i) Subscript

.....

.....

.....

(ii) Drop cap

.....

.....

.....

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

.....

.....

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

(2marks)

.....

.....

19. a) Enumerate four breakthroughs in health care instigated by ICT

(4marks)

.....

.....

.....

.....

.....

b) Mention four application areas of Artificial Intelligence

(3marks)

.....

.....

.....

.....

.....

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

.....

.....

.....

.....

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

.....

.....

.....

.....

.....

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

.....

.....

.....

.....

.....

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

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

.....

(ii) WhatsApp chat

.....

(iii) Phone conversation

.....

(iv) Walkie talkie conversation

.....

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

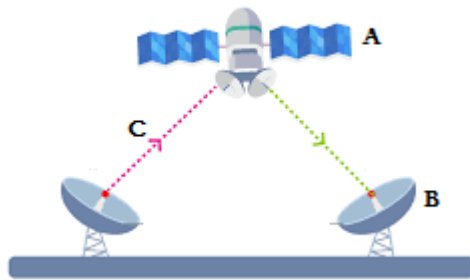
.....

.....

.....

.....

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



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

.....

.....

.....

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

.....

.....

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

.....

.....

.....

.....

.....

GOLDLITE ONLINE SUPPLIES
Kenya Certificate of Secondary Education
KCSE TOP SCHOOLS TRIAL SERIES 2025

Name Admission number

Candidate's Signature.....Date.....

MOI GIRLS' NAIROBI TRIAL SERIES

451/1

COMPUTER STUDIES

PAPER 1

INSTRUCTION TO CANDIDATES

- a) Write your name and index number in the space provided above.
- b) Sign and write the date of examination in the spaces provided above.
- c) This paper consists of **two** sections **A** and **B**.
- d) Answer **all** the questions in section **A**.
- e) Answer question **16** (Compulsory) and any other **three** questions from section **B**.
- f) All answers should be written in the space provided in the question paper.
- g) **Do not remove any pages from this booklet.**
- h) **Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.**
- i) **Candidates should answer the questions in English.**

For Examiner's Use Only		
Section	Question Number	Candidate' s Score
A	1-15	
	16	
	17	
	18	
	19	
	20	
Total Score		

CONTACT US ON 0724351706/0726960003
FOR MORE PAPERS FOR ALL SUBJECTS AND MARKING SCHEMES

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)

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

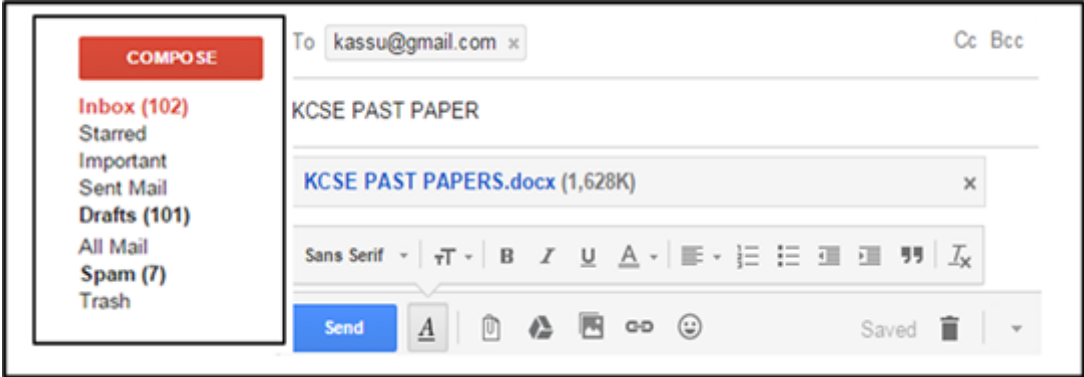
7. With an aid of a diagram, explain one-to-one database relationship. (2 Marks)

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

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 Marks)

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

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

(2 Marks)

.....

.....

.....

.....

.....

.....

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

(3 Marks)

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

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

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

i. Write a pseudocode for the above program

(5 Marks)

.....

.....

.....

.....

.....

.....

.....

.....

.....

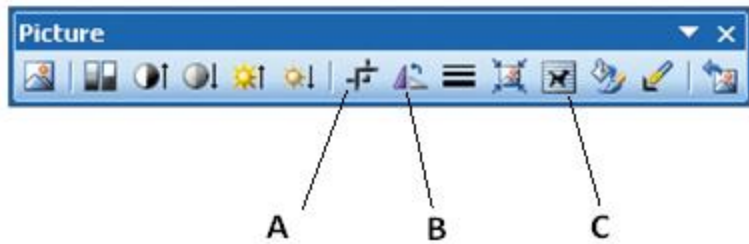
.....

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

ii. Draw a flow chart for the above pseudocode

(5 Marks)

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



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

(i) A (1 Mark)

.....

.....

.....

(ii) B (1 Mark)

.....

.....

.....

(iii) C (1 Mark)

.....

.....

.....

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

.....

.....

.....

.....

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

(i) Title case

.....

(ii) Toggle case

.....

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

(i) Legend

.....
.....
.....
(ii) Data range

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

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

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

(2 Marks)

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

(2 Marks)

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

(2 Marks)

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

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

.....
.....
b. Convert each of the following numbers system.

(i) 0.78125_{10} to binary

(2 Marks)

.....

.....

.....

.....

.....

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

.....

.....

.....

.....

.....

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

$1010.11 + 111.10 - 101.11$

.....

.....

.....

.....

.....

.....

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

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

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

i. Guided transmission medium and unguided transmission media

.....

.....

ii. Multiplexing and demultiplexing

.....

.....

.....

.....

iii. Logical and physical Topology

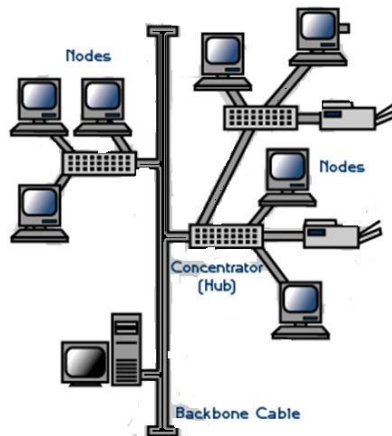
.....

.....

.....

.....

b. Below is a diagram of a network topology.



i. Name the above topology

(1 Mark)

.....

.....

.....

ii. State two advantages and two disadvantages of using the topology named above

(4 Marks)

.....

.....

.....

.....

.....

c. List and explain the two data transmission techniques

(4 Marks)

.....

.....

.....

.....

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

.....

.....

.....

.....

.....

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

.....

.....

.....

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

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

.....

.....

.....

.....

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

.....

.....

.....

.....

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

.....

.....

.....

.....

.....

GOLDLITE ONLINE SUPPLIES
Kenya Certificate of Secondary Education
KCSE TOP SCHOOLS TRIAL SERIES 2025

Name Admission number

Candidate's Signature.....Date.....

NAIROBI SCHOOL TRIAL EXAMS

451/1

COMPUTER STUDIES

PAPER 1

INSTRUCTION TO CANDIDATES

- a) Write your name and index number in the space provided above.
- b) Sign and write the date of examination in the spaces provided above.
- c) This paper consists of **two** sections **A** and **B**.
- d) Answer **all** the questions in section **A**.
- e) Answer question **16** (Compulsory) and any other **three** questions from section **B**.
- f) All answers should be written in the space provided in the question paper.
- g) **Do not remove any pages from this booklet.**
- h) **Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.**
- i) **Candidates should answer the questions in English.**

For Examiner's Use Only		
Section	Question Number	Candidate' s Score
A	1-15	
	16	
	17	
	18	
	19	
	20	
Total Score		

CONTACT US ON 0724351706/0726960003
FOR MORE PAPERS FOR ALL SUBJECTS AND MARKING SCHEMES

SECTION A

1) (a) State any two types of data processing methods.

[1mrk]

(b) During a visit to the typing room, Jane a computer student observed a type of printer that uses a beam to create an image on a rotating drum. As the beam hits the drum, some regions attract ink toner particles. The toner is then fused onto a piece of paper.

i) State the name of this type of printer and indicate whether it is an impact or non-impact printer. [1mk]

ii). List two advantages of using the printer mentioned in a. above.

[2mrks]

2) Bunam Water Company sends out field officers to take consumer meter readings. The data collected by the officers is then keyed into the computer. The system then generates utility bills which are printed and sent to the consumers.

i) State two transcription errors that are likely to occur during meter reading or input. [1mrk]

ii. State two ways such errors can be avoided.

[2mrks]

iii. State the type of processing carried out.

[1mrk]

3) Mention at least two trends in the technological revolution of computers.

[2mrks]

4) Explain the importance of the following spreadsheet operations.

[2mrks]

Freezing columns

Data validation

5) Name two types of relationships that can be applied in database design.

[1mrk]

6) Briefly explain any Four block operations that can be performed on data in word processing.[4mrks]

.....

.....

.....

.....

.....

7) Mutiso wanted to upgrade the RAM of his computer. State two factors Mutiso should consider when purchasing a RAM module. [2mrks]

.....

.....

8) Define the following terms: [2mrks]

(i) Computer Port

.....

.....

(ii) Power supply unit

.....

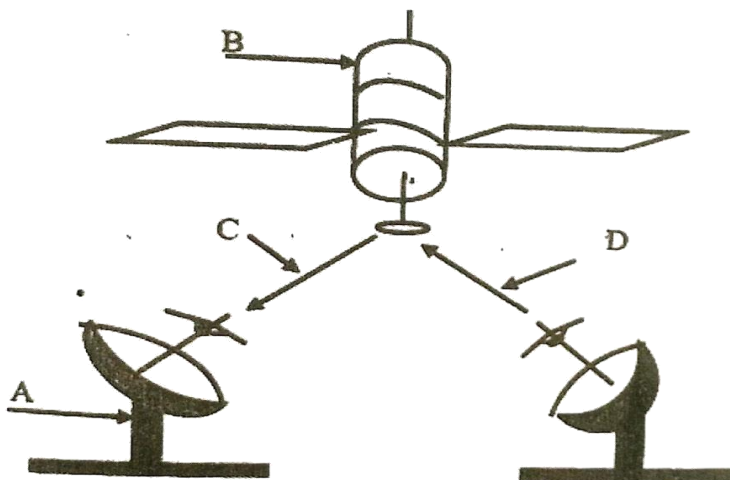
.....

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

.....

.....

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



(i) Name the communication media depicted in the above diagram: [1mrk]

.....

.....

(ii) Name the parts labelled A, B, C, and D [3mrks]

11) In a desktop publishing document, an image embedded can be transformed in various ways. Name any two ways one can use to make the image fit in a designated area. [2mrks]

.....

.....

12) Differentiate between source program and object program. [2mrks]

.....

.....

13) Differentiate between the following terms in Internet. [4mrks]

(i) Drafts and outbox

.....

.....

.....

.....

(ii) cc and bcc

.....

.....

14) State two characteristics of a computer that is infected by computer viruses. [2mrks]

.....

.....

.....

.....

15) To process an instruction, the CPU goes through a cycle of three stages. Name each of the stages. [3mrks]

.....

.....

.....

.....

SECTION B

ANSWER QUESTION 16 AND ANY OTHER 3 QUESTIONS IN THIS SECTION

16) a) State any three activities that occur in a program compilation process. [3mrks]

.....

.....

.....

.....

b) Give two types of errors that may be detected during program testing.

[2mrks]

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

17) a. Describe the term prefixing an extra sign bit as used in data representation.

[2mrks]

b. Convert each of the following numbers system.

(i) 0.78125_{10} to binary

[2mrks]

(ii) $3A9_{16}$ to Octal

[2mrks]

c. Perform the following binary operation. $1010.11 + 111.10 - 101.11$

[3mrks]

d) Using one's complement, arithmetic perform leaving the answer the decimal follow notation. $17_{10} - 45_{10}$
[6mrks]

18) (a) State THREE roles of a programmer in system development life cycle.

[3mrks]

b) State four activities that may be carried out when disposing off an old system in an organization.[4mrks]

.....

.....

.....

.....

.....

(c) Distinguish parallel changes over from straight change over as used in system implementation. [2mrks]

.....

.....

.....

.....

.....

d) Discuss any two fact finding methods. [4mrks]

.....

.....

.....

.....

.....

e) Differentiate between an open system and a closed system. [2mrks]

.....

.....

.....

19) a) Explain four ways in which a programmer can make program code easy to follow. [4mrks]

.....

.....

.....

b) List four examples of utility software. [2mrks]

.....

.....

.....

d) State three benefits of having the advert uploaded on the Internet. [3mrks]

.....

.....

.....

e) State four ways in which barcode readers may be used in school. [4mrks]

.....

.....

.....

.....

.....

20) Networking is said to be important in facilitation of data transfer.

- a) Dr. Jabari, a networking expert trained his students on various data communication aspects. After a lesson, he asked them to state and explain three modes of data transmission. As a student, what answers would you provide? [3mks]

.....

.....

.....

.....

.....

- b) Differentiate between LAN and WAN as used in computer networks. [2mks]

.....

.....

- c) State two advantages of fiber-optic transmission media. [2mks]

.....

.....

- d) In a computer network, a server computer must be installed with a network operating system in order to operationalize a number of network functions. State three functions performed by a network operating system (NOS). [3mks]

.....

.....

.....

- e) (i) Define the following terms as used in the internet.

Browser

[1mk]

.....

.....

Spam

[1mk]

.....

.....

- ii) Many organizations own and manage websites for various uses. One use of website by a business is conducting their business activities through e-commerce. Mention three advantages of e-commerce. [3mks]

.....

.....

.....

.....

GOLDLITE ONLINE SUPPLIES
Kenya Certificate of Secondary Education
KCSE TOP SCHOOLS TRIAL SERIES 2025

Name Admission number

Candidate's Signature.....Date.....

STAREHE BOYS SCHOOL

451/1

COMPUTER STUDIES

PAPER 1

INSTRUCTION TO CANDIDATES

- a) Write your name and index number in the space provided above.
- b) Sign and write the date of examination in the spaces provided above.
- c) This paper consists of **two** sections **A** and **B**.
- d) Answer **all** the questions in section **A**.
- e) Answer question **16** (Compulsory) and any other **three** questions from section **B**.
- f) All answers should be written in the space provided in the question paper.
- g) **Do not remove any pages from this booklet.**
- h) **Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.**
- i) **Candidates should answer the questions in English.**

FOR EXAMINER'S USE ONLY

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

CONTACT US ON 0724351706/0726960003

FOR MORE PAPERS FOR ALL SUBJECTS AND MARKING SCHEMES

SECTION A (40 Marks)

Answer all questions in this section

1. Identify the computer generation that is associated with each of the following characteristics.
 - i) Use of computers that imitate human intelligence (1 mark)
 - ii) Used of punched cards for data input (1 mark)
 - iii) Use of Large Scale integrated circuits (1 mark)
 - iv) Use of cloud storage (1 mark)
2. Distinguish between *line spacing* and *character spacing* as used in word processors. (2 marks)
.....
.....
.....
.....
3. Although super computers have greater processing capabilities than main frame computers, large communications companies prefer main frame computers for management of their data and operations. State **two** reasons for this preference. (2 marks)
.....
.....
.....
.....
4. After purchasing a laptop, Mary realized that it could not connect to the internet through a wireless access point. State **three** possible causes for the failure in connection (3 marks)
.....
.....
.....
.....
.....
.....
.....
5. Aisha found one of her favourite movies on a youtube channel. State **three** advantages of downloading the movie to the computer hard disk and watching it from there instead of streaming it live from the youtube channel. (3 marks)
.....
.....
.....
.....
6. State **two** circumstances that necessitate encryption of data in computer systems (2 marks)

.....

.....

.....

.....

7. A student saved a document in a memory card. Later on the memory card crashed and therefore the work got lost. State **three** precautions that the student should have taken to ensure that the work was not lost. (3 marks)

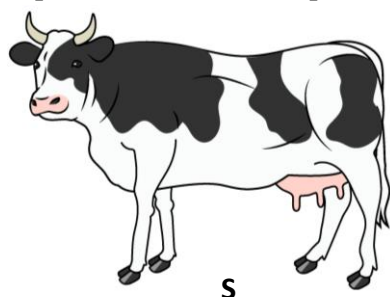
.....

.....

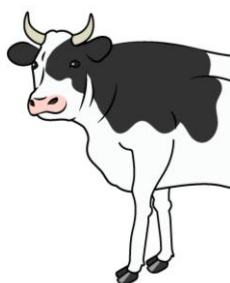
.....

.....

8. Purity inserted a picture labelled **S** in a publication she designed as shown in the figure below.



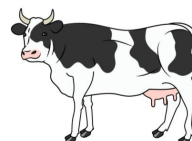
She applied different transformations to achieve the results labelled W, X and Y



W



X



Y

State the transformation applied in each case

W..... (1 mark)

X..... (1 mark)

Y..... (1 mark)

9. Kennedy inserted a flash disk in a computer to print out a document stored in it but the error message “*USB not recognized*” appeared on the screen of the computer. State **two** possible causes of the error message. (2 marks)

-
-
-
-
10. a) Ben noticed that a USB mouse in one of the desktop computers in the computer lab could not move the pointer on the screen. State **two** ways he could solve that problem (2 marks)

.....

.....

.....

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

-
-
-
11. Sarah, a system analyst in Excel Company has decided to use document review in order to collect data necessary for developing a new information system for the company. State **three** reasons that could have influenced her decision to use this method. (3 marks)

-
-
-
-
12. Explain **two** ways in which growth of the internet has contributed to an increase in computer crimes. (2 marks)

-
-
-
-
13. When constructing a school's database, Mark set the data type "*number*" for the field "*marks*". Name **three** field properties that he can set for this data type in order to limit values entered in the field. (3 marks)

-
-
-
-
14. State **two** ways in which errors that occur during data processing are threat to data integrity. (2 marks)

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

SECTION B (60 Marks)

Answer question 16 (Compulsory) and any other three questions

16. a) State **three** characteristics of third generation languages that distinguish them from all other high level programming languages. (3 marks)

.....

.....

.....

b) Program documentation is categorized as either technical documentation or user –oriented documentation. Classify each of the following documentation components as either technical or user oriented.

i) Program flowchart (1 mark)

.....

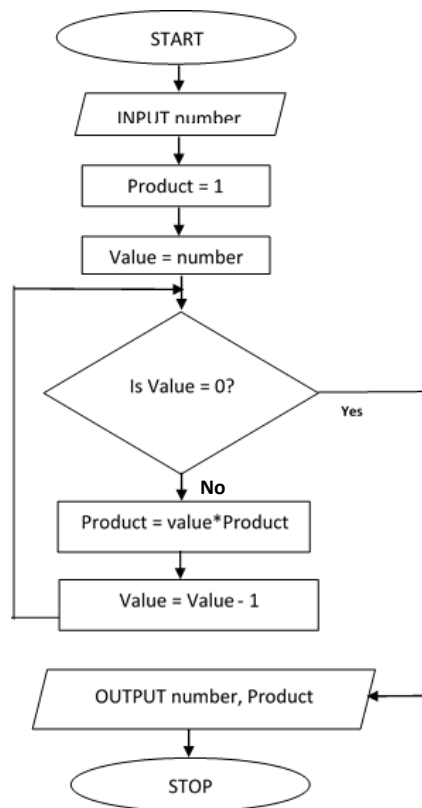
ii) Error handling procedures (1 mark)

.....

iii) Source code (1 mark)

.....

c) The figure below shows a flowchart. Use it to answer the questions that follow:



i) Name the control structure used in the flowchart (1 mark)

.....

ii) Determine all the outputs of the flowchart if the input is the number is five (3 marks)

iii) Write a pseudocode for the flowchart above (5 marks)

(5 marks)

17. a) The table below shows items extracted from Computer Studies subject score calculations spreadsheet. Use it to answer questions (i) to (ii)

	A	B	C	D
1	Paper	Weight	Score	Weighted Score
2	Paper one	0.3	80	24
3	Paper two	0.4	70	28
4	Paper three	0.3	60	18
5				
6	Average Weighted Score			22.66

Using cell references only, write a function that may have been used to compute the following:

i) the weighted score in D3

(2 marks)

ii) Average weighted score in cell D6.

(2 marks)

b) Explain how social engineering is a threat to data security

(2 marks)

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

i) Formula bar

(1 mark)

ii) Name box

(1 mark)

d) **State** two functions of a select query in a database

(2 marks)

.....

.....

.....

.....

e) State **two** characteristics of command line operating systems that make them suitable for configuring computer networks

(2 marks)

.....

.....

.....

.....

f) When purchasing a word processing software, Atieno was advised to consider its user friendliness. State **three** features that the software should have for her to conclude that it is user friendly:

(3 marks)

.....

.....

.....

.....

18. a) State **two** characteristics of open systems that make them better than closed systems

(2 marks)

.....

.....

.....

b) State the function of each of the following during system construction:

i) Programming language

(1 mark)

.....

.....

ii) Invalid data

(1 mark)

.....

.....

c) Explain **two** reasons an organization may change an existing information system

(4 marks)

d) A school decided to change from a manual examination processing system to an online examination processing system using parallel change over strategy. State **three** challenges they are likely to face when using this changeover strategy.

(3 marks)

.....

.....

.....
.....
e) Peter was assigned the responsibility of designing the school magazine. State **two** reasons why he would prefer to use DTP software and not a word processor. (2 marks)

.....
.....
.....
.....
f) The use of ICT has affected every aspect of human life either negatively or positively. State **two** ways in which ICT has negatively affected the music industry. (2 marks)

.....
.....
.....
19. a) A bank with many networked branches uses a data processing mode whereby each branch does its processing independently and then forwards the results to a central computer at the headquarters for final processing.

i) Identify this data processing mode (1 mark)

.....
.....
ii) State **two** advantages of this data processing mode (2 marks)

.....
.....
b) State **two** reasons why accumulation of dust should be avoided in the computer lab. (2 marks)

.....
.....
c) For each of the following, identify the most appropriate internet service:

i) Real time exchange of text messages (1 mark)

.....
ii) Personal website for sharing personal opinions on a particular subject (1 mark)

.....
iii) Enable people in different geographical locations to hold live meetings (1 mark)

.....

d) Tom a network designer was tasked to set up a local area network for Mwangaza Technical institute. He was provided with 4 computers, coaxial cables, 1 printer and 2 terminators. With aid of a well labelled diagram, design the most appropriate network topology that could have been set up by Tom. (3 marks)

.....

.....

.....

.....

.....

.....

.....

.....

e) State **two** circumstances that may necessitate a network administrator to use a bridge in LAN (2 marks)

.....

.....

.....

f) Explain a reason why single mode fibre optic cable is preferred for long distance transmission of data signals (2 marks)

.....

.....

20. a) One of the characteristics of solid state drives (SSD) is the use of electronic circuits to store data. Explain how binary logic is used to represent data in these devices. (2 marks)

.....

.....

.....

.....

b) Convert 17.05_{10} to its binary equivalent (3 marks)

.....

.....

c) Using twos complements and 8 bit notation, perform the following subtraction:

$$29_{10} - 15_{10}$$

(4 marks)

.....

.....

.....

.....

.....

.....

.....

d) Perform the following binary arithmetic

$$11101.011 - 100.110 + 10100.111$$

leave your answer in decimal notation

(4 marks)

.....

.....

.....

.....

.....

e) State **two** challenges associated with the use of voice input for securing computer systems (2 marks)

.....

.....

.....