

ZERAKI ACHIEVERS EXAMINATION 13.0
Kenya Certificate of Secondary Education
FORM FOUR EXAMINATION -2024
CODE451/1 SUBJECT: COMPUTER STUDIES
Paper 1
Marking Scheme

1. Give three reasons to justify why portable computers are gaining popularity in the current society
- ✓ *They have rechargeable hence can be used in areas without power once charged*
 - ✓ *Are portable therefore can easily be carried from one place to another this allow it to be used anywhere*
 - ✓ *Require less physical space*

Award 1 mark each max 3

2. State three input devices used in a smartphone

- ✓ *Touchscreen*
- ✓ *Microphone*
- ✓ *Camera*
- ✓ *Finger print scanner*
- ✓ *QR code Scanner*

Award 1mark each max 3

3. A vehicle assembly company has introduced robots to replace the human workforce. Describe three effects this would have on the work force

- ✓ *This innovation will create some job opportunities to experts who know how to operate robots when handling tasks*
- ✓ *Introduction of Robot will create job replacement where some employees services will be terminated since the robot will take up their roles*
- ✓ *Some employees will be moved to other departments or areas (Displacement)*

Award 1mark each max 3

4. Explain how a library system facilitates smooth running of library services

- ✓ *Library systems have inventory system for keeping track of books in the library*
- ✓ *Library system have a lending module which help in issuing and returning of books. The system have the ability to surcharge those who fail to return the books in time*
- ✓ *Modern library systems have security module which prevent library books from moving out of the library without a permission. The system is installed with alarm that notifies the attendant incase somebody is trying to steal a book*

Award 1mark each max 2

5. Give three possible reasons for extinction of Dot Matrix printers in the market today

- ✓ *Produce low quality printouts*
- ✓ *Very slow while printing*
- ✓ *Very noisy*

Award 1mark each max 3

6. State two ways of manipulating text in a printable area of a publication

- ✓ *Using a text frame*
- ✓ *Using a textbox*

Award 1mark each max 2

7. James is pursuing Bachelors of Computer Science at University of Yogona in China, he is supposed to graduate at the end of this year and then come back to Kenya to seek for employment Name any three career opportunities in the field of ICT that James may take up after graduation.

- ✓ *Computer programmer*
- ✓ *System Analyst*
- ✓ *IT Manager*
- ✓ *Web designer*
- ✓ *Network Administrator*

Award 1mark each max 3

8. State three factors to consider when selecting a transmission media

- ✓ *Speed of the transmission media*
- ✓ *Accuracy and reliability*
- ✓ *Cost*
- ✓ *Volume*
- ✓ *Type of data*

Award 1mark each max 3

9. Describe two way of resolving hanging in a computer

- ✓ *Try terminating unresponsive programs using the task manager by pressing Ctrl+Alt+Del*
- ✓ *Forcefully shutdown the computer by pressing the power button*

Award 1mark each max 2

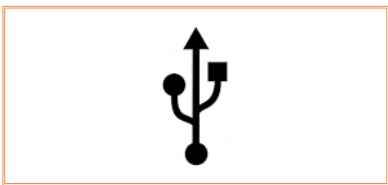
10. Multinational Company handles a lot of data and also collaborate with other companies all over the World and therefore data integrity must be maintained all the times. Describe three ways employed by this company to minimize threats to its data

- ✓ *Use methods that capture directly from source*
- ✓ *Backup data regularly and save it in a separate location*
- ✓ *Use error detection and correction for data on transit*
- ✓ *Enforce security measures such as password and biometric systems*
- ✓ *Have user interfaces that prevent invalid data entries*

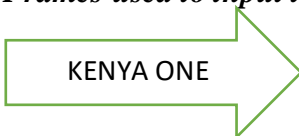
Award 1mark each max 3

11. Describe the purposes of a frame as used in DTP

- ✓ *Frames are used to capture images*



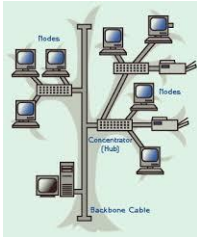
- ✓ *Frames used to input text*



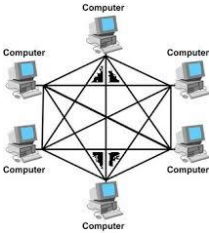
Award 1mark each max 2

12. Use a diagram to describe the following network topologies

- (a) Tree - *is a type of network topology in which two or more different topologies are integrated or combined to lay out a network.*



- (b) Mesh - *is a network topology in which each node is fully connected to every other node via a dedicated network link*



Award 1 mark each max 2 for correct diagram

Award 1 mark each max 2 correct description

13. State two uses of the task manager

- ✓ *It contain the buttons of the currently running programs*
- ✓ *Allow the user to switch between different tasks*

Award 1 each max 2

14. Describe each of the following Validation checks as used in data processing

- (i) Format check

- ✓ *Checks the data is in the right format*

- (ii) Presence digit

- ✓ *Checks that data has been entered into a field.*

Award 1mark each max 2

15. Describe three technological platforms used by Kenyan Secondary students to collaborate with their peers in Canada, US and UK

- ✓ *Social media –Students use Facebook, Instagram, Whattapps to link with others to allow them share educational materials*
- ✓ *Video conferencing –Through zoom, webex and google meet learners can have discussion in a given learning area irrespective of where they are*
- ✓ *Email- Email attachments can be used to exchange educational materials*
- ✓ *Google Doc –provide collaborative environment where learners from different places can share the same document at the same*

Award 1mark each max 3

16.

(i) Name two design tools that a programmer require when carrying out dry running

- ✓ **Flowchart**
- ✓ **Pseudo code**

Award 1 mark each max 2

(ii) Mention four characteristics of a Machine language

- ✓ **Instructions are in binary form (0 and 1)**
- ✓ **Are directly understood by the computer (require no translation)**
- ✓ **Machine dependent**
- ✓ **Execute very fast**

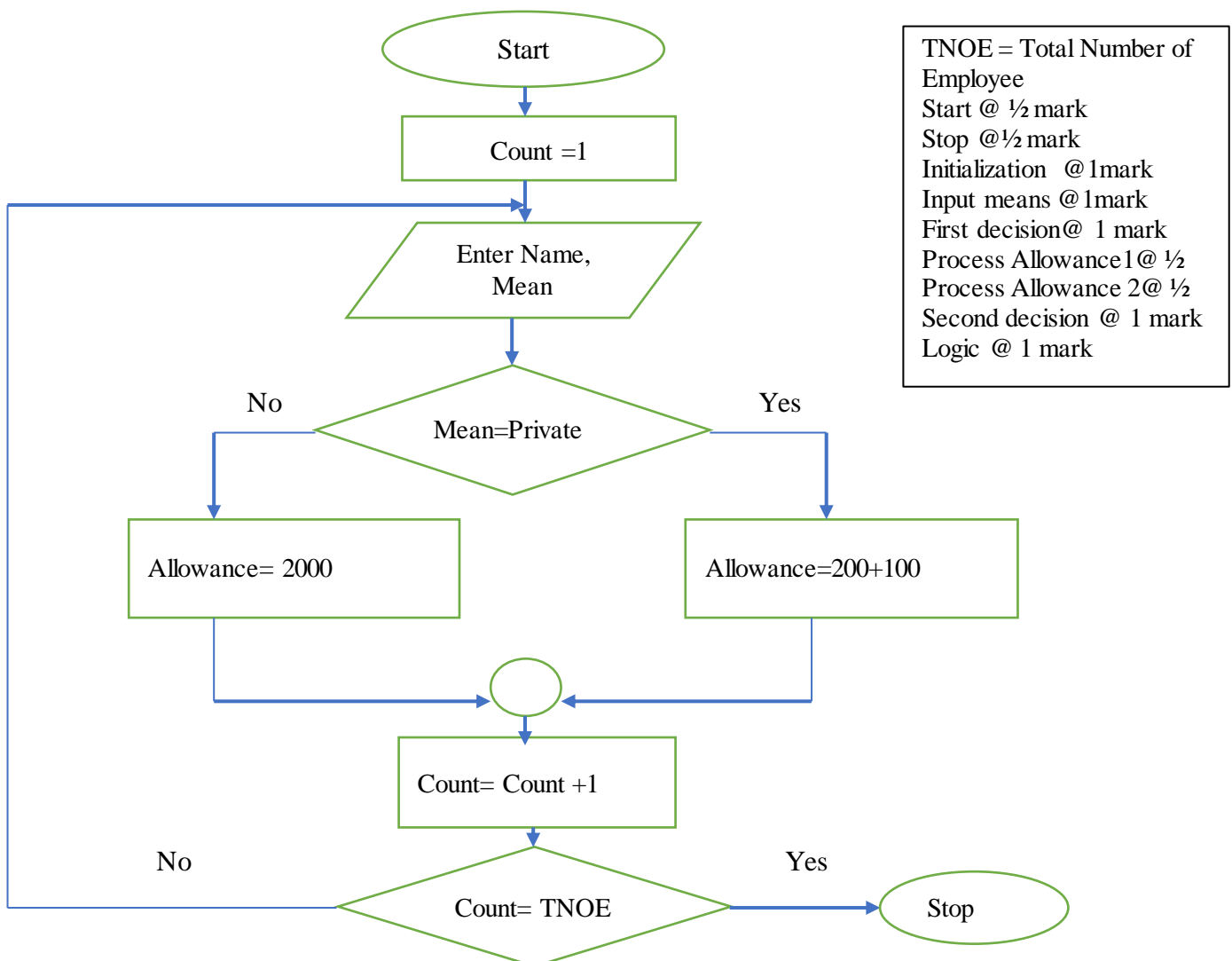
Award 1 mark each max 4

(iii) What is internal documentation with regard to programming

- ✓ **Refer to non-executable line (comments) in the source program that help in explaining the code statements**

Award 2 marks each max 2

(iv) A company's workers travel to work either by public or by private mean. All workers are paid a travel allowance of Kshs.200, but those using private means are paid an additional Kshs. 100. Draw a flowchart that will determine workers travel allowance



17.

(i) State the stage in systems development when the activities listed below are performed

(a) The system analyst perform system audit

✓ ***System review and maintenance***

(b) Modification of data file formats

✓ ***System implementation***

(c) Writing codes for the system

✓ ***System construction***

Award 1 mark each max 3

(ii) State two reasons to justify why users must be trained thoroughly during system implementation

✓ ***increase employee satisfaction***

✓ ***instill greater confidence in the new system***

✓ ***give employees better engagement in the system rollout***

Award 1 mark max 2

(iii) Briefly describe the following types of system maintenances

(a) Adaptive

✓ ***Modification of a system performed after delivery to keep the system usable in a changed or changing environment***

(b) Perfective

✓ ***Change made to the system after delivery to enhance its performance and make it more user friendly***

Award to marks each max 4

(iv) Give three reasons why Word processor is one of the most common application of many computer user

✓ ***More user friendly***

✓ ***Formatting features***

✓ ***AutoSave features***

✓ ***Ease of access***

✓ ***Spelling and grammar checkers***

Award 1 mark each max 3

(v) State three ways of creating a table in Ms word

✓ ***Insert table***

✓ ***Import table***

✓ ***Convert text to table***

Award 1 mark each max 3

18.

(i) Convert

(a) 376_8 to Hexadecimal

(2marks)

3 = 011

7 = 111

6 = 110

0 1111 1110
0 F E = FEH

(b) $34\frac{12}{32}$ base 10 to Binary

(2marks)

2	34
2	17 REM 0
2	8 REM 1
2	4 REM 0
2	2 REM 0
2	1 REM 0
	0 REM 1

$0.375 \times 2 =$	0.75
$0.75 \times 2 =$	1.5
$0.5 \times 2 =$	1.0

100010.011₂

(ii) Perform the following binary arithmetic giving the answer in decimal notation

(c) $10110.0110_2 + 0101.01_2$

(2marks)

10110.0110

0101.0100

11011.1010 ----- 27.625₁₀

(d) $1001.1001_2 - 111.100_2$

(2marks)

1001.1001

111.1000

010.0001 ----- 2.0625

(iii) Study the spreadsheet below and use it to answer questions that follow

	A	B	C	D	E	F	G	H
1	Name of the car	Year of Manufacture	Fuel Type	State	No Sold	Price	Total	Remark
2	Mazda	2017	Diesel	New	20	2000000		
3	Honda CRV	2018	Diesel	Used	34	1800000		
4	Lexus	2015	Petrol	Used	28	3700000		
5	Toyota Premio	2016	Diesel	New	10	1000000		
6	Nissan Xtrail	2017	Petrol	New	18	1500000		
7	Volkswagen	2019	Diesel	Used	34	2500000		
8	Audi	2020	Diesel	Used	50	1800000		

(a) Give a formula that will compute total sales from Audi

✓ **=product(e8:f8) or =e8*f8**

Award 2 marks max 2

- (b) Write a function that can be keyed in cell B9 to calculate the total number of cars sold that consume Diesel

✓ **=Sum(C2:C8,"Diesel",E2:E8)**

Award 2 marks max 2

- (c) Write a function that can be entered in cell H2 and copied down the column will display the texts as shown the table below

State	Remark
New	Automatic
Used	Manual

✓ **=IF(D2= "New", "Automatic","Used").**

Award 1mark for function name and bracket to bracket 2marks max 3

19.

- (i) Briefly describe three functions of a query as used in database

✓ **Used to perform arithmetic manipulation a database**
 ✓ **Used to search a record or a set of records in a database**
 ✓ **Used to add, update and delete records**

Award 1 mark each max 3

(ii)

- (a) What is a primary key as used in database

✓ **It is a unique field in a table which is used to identify records in table within a database**

Award 2 marks max 2

- (b) State two functions of a primary key field

✓ **Identify records in a database**
 ✓ **Prevent duplicate data from being entered in the database**

Award 1 mark each max 2

- (iii) A student created a relationship between two tables then entered data in the respective tables. He was unable to run the queries because of the Type Mismatch error

- (a) State the cause of this error

✓ **The two fields used to create a relationship have different data types**

Award 1mark max 1

- (b) State how this error can be corrected

✓ **Open the table in design view**
 ✓ **Set the fields used to create the relationship to have the same data type**

Award one mark each max 2

- (iv) What is telecommuting

✓ **Working from home and communicating with the office by computer, telephone, the internet and other communication technology**

Award 2marks max 2

- (v) Give three reasons to justify why telecommuting is gaining popularity in the modern society

✓ **Flexible working hours**
 ✓ **Reduce employees turnover**
 ✓ **Increased productivity**
 ✓ **Lower overall operation cost (Reduce rent and commuting cost**

Award 1 mark each max 3

20.

(a) Name two example of security monitors used to control unauthorized access

- ✓ **CCTV camera**
- ✓ **Log file**

Award 1 mark each max 2

(b) State three way in which hardware failure is a threat to data security

- ✓ **Lead to data loss**
- ✓ **Access denial**
- ✓ **Can create a loop hole that allow unauthorized access**

Award 1 mark each max 3

(c) Alteration is illegal changing of data and information. This is one of the computer crimes common in the 21st Century. Describe three ways employed by organizations to curb this vice

- ✓ **Assign user access rights and privileges**
- ✓ **Install cctv cameras for monitoring**
- ✓ **Motivate employees**
- ✓ **Use of log files**
- ✓ **Setting organization security policy**

Award 1 mark each max 3

(d) Malcom is an employee of Kajambo LTD whose URL is <http://www.kajambo.co.ke>. All employees were directed by the manager to create email addresses hosted in the company website. State how Malcom email address will look like

- ✓ **malcom@kajambo.co.ke**

Award 2 marks max 2

(e) A web browser have a navigation toolbar fitted with a number of command buttons. State the functions of each button of the navigation toolbar listed below

(i) History

- ✓ **Display the websites that were visited recently**
- (ii) Home
- ✓ **Take the user to the first page (Home page)**

Award 1 mark each max 2

(f) Highlight three advantages of email services over postal services

- ✓ **Delivery message within the shortest time possible**
- ✓ **Cost effective –minimize postage cost**
- ✓ **Easy mail sharing and collaboration**

Award 1 mark each max 3