

Computer Studies

Form Three Marking Scheme

1. Mention two functions of a file extension
 - *Used to determine the content of a file*
 - *Used to search for a file in the computer*
 - *Help the operating system to choose the most appropriate program to open the file*

Award 1 mark each max 2
2. Describe how data is recorded on optical storage media
 - *The surface of the optical media is made up of lands and pit*
 - *When a laser beam hit the the surface of the optical media, the pit will absorb light and that will be interpreted as zero since there is no reflection.*
 - *When the light hits the land it is interpreted as one since there is reflection.*

Award 1 mark each max 3
3. What is normalization in databases
 - *It is the process of decomposing fields into separate but related tables to enhance flexibility in database manipulation.*

Award 2 marks max 2
4. State three causes of data loss in computing
 - *Improper shut down of the computer*
 - *Sudden power loss while the computer is in use*
 - *Accidental erasure*
 - *Crashing of the hard disk*
 - *Computer virus*
 - *Unauthorized access*

Award 1 mark each max 3

 - (a) List three precautions taken against crashing of hard disk
 - *Correct procedure of shutting down the computer*
 - *Avoid dropping disk to the ground*
 - *Avoid dust*
 - *Avoid exposure to stronger magnetic fields*

Award 1 mark each max 3
5. Describe the following terms as used in data security
 - (a) Social Engineering
 - *The act of soliciting for sensitive information from unsuspecting users*
 - (b) Patches
 - *These refers to simple program code incorporated in a system to fix weakness in system that may make it vulnerable to threats*

Award 1 mark each max 2
6. Give two advantages of the higher number of pixels per square centimeter
 - *high quality images*
 - *High resolution of monitor*

Award 1 mark each max 2
7. Name four tools in Word processor that would help a user to minimize spelling mistakes when creating a document
 - *Autocorrect*
 - *Autocomplete*
 - *Spelling and grammar checkers*
 - *Redo and undo*

Award 1 mark each max 4

8. A computer is built from three types of physical components; processors memories and I/O devices. State the functions of each of the above components
- **Processors they execute programs to convert data into information that is meaningful to the user**
 - **Memories store data and information semi-permanently and permanently**
 - **O/I devices they are used to key in data and display the output.**

Award 1 mark each max 3

9. What is the function of the following Microsoft Access field properties
- (i) Caption
- **It is a more descriptive name for a field to be used in a table or form display.**
- (ii) Validation Rule
- **Is an expression that restricts the values to be entered in a field?**

Award 1 mark each max 2

10. During a computer lesson a student defined multitasking as a concept where a computer is able to process numerous task at the same time. Disagree or Agree with student then support your answer
- **Disagree.**
 - **The computer uses the time slice principle to assign each task a fraction of the processor time then execute these tasks one at a time at very high speed such the user will view as if they are being executed at the same time**

Award 1 mark each max 2

11. Convert 12.125_{10} to binary number system (3marks)

<i>Whole number</i>	<i>decimal part</i>
1100_2	$0.125 \times 2 = 0.25$
	$0.25 \times 2 = 0.5$
	$0.5 \times 2 = 1.0$
1100.001_2	↓

12. Identify the type of interfacing cables represented in Figure 1 and 2



Figure 1
USB cables



Figure 2
HDMI cables

Award 1 mark each max 2

13. What is software License
- **A software license is a document that provides legally binding guidelines for the use and distribution of software**

Award 2marks max 2

14. State three non-printable guidelines supported by MS-publisher

- **Ruler guide**
- **Column guide**
- **Margin guide**

Award 1 mark each max 3

15. Mention three emerging issues that affects the use internet

- **Access to dirty sites e.g. pornography sites**
- **Spread of drug trafficking**
- **Rise of cyber crimes**
- **Dehumanization**

Award 1 mark each max 3

16.

(a) State two differences between ones compliment and twos complement

- **In ones compliment you bitwise while in twos compliment you bitwise and add one**
- **In ones compliment the overflow is added while in twos compliment, the overflow is ignored**
- **Ones compliment have two ways of representing a zero while twos complement have only one way of representing a zero**

Award 1 mark each max 2

(b) Give four benefits of using binary representation in computing

- **It is easier to construct electrical circuit based on the ON and OFF logic**
- **Binary technology help to create devices that are reliable**
- **Binary representation help in creating devices that are energy efficient**
- **Binary representation can be used to represent all forms of data**

Award 1 mark each max 4

(c) 1001_2 is a binary representation of a negative number. Workout the likely positive equivalents in base ten

- **Assume that the last bit is a sign bit representing -ve number 1001 will be 001**
 $001 = 1$
- **Assume that 1001 is ones complement of a number then you bitwise not the number 1001**
 $=0110 = 6$
- **Assume that 1001 is twos complement of a number the subtract one from it then recompute $1001-1 = 1000$ recompute to get $0111 = 7$**

Award 1 mark each max 4

(d) Convert 765_8 to Hexadecimal number system

$$7 = 111$$

$$6 = 110 \quad 1mk$$

$$5 = 101$$

$$1 \quad 1111 \quad 0101 \quad 1mk$$

$$= 1F5H \quad 1mk$$

4

(e) Use twos complement to subtract 15_{10} from 0110_2

$$15 = 1111 \quad \frac{1}{2}$$

$$1c = 0000 \quad \frac{1}{2}$$

$$2c = 0001 \quad \frac{1}{2}$$

$$0110$$

$$+ 0001$$

$$0111 \quad \frac{1}{2} \quad = 0111_2 \quad 1mk$$



17.

- (a) The table below is an extract from a spreadsheet program showing transaction details of Ferry uniform Distribution. Use it to answer the questions that follow

	A	B	C	D	E
1	Customers	Items Bought	Price	Quantity Bought	Date Bought
2	Leeny Distributors	Tunic	600	1000	06/03/2021
3	Maky Distributors	Stocking	300	1500	07/04/2021
4	Top Hill Distributors	Pullover	1000	7000	14/05/2021
5	Kagiri Distributors	Tie	150	3000	13/06/2021
6	Lonny Distributors	Shirt	500	2000	23/06/2021
7	Maky Distributors	Shirt	500	1500	30/06/2021

- (i) Identify two data types used to represent data in the table above

- **Label**
- **Values**

Award 1 mark each max 2

- (ii) State how cell E7 will be presented using R1C1 style

- **R7C5**

Award 1 mark max 1

- (iii) Use a function to get the following

- Average price (**1mark**)
= **AVERAGE (C2: C6)**

Award 1 mark max 1

- The item with the least price (**1mark**)
= **MIN (C2 :C6)**

Award 1 mark max 1

- (iv) Using absolute cell referencing. Determine the new cost of Pullover and tie given that a discount is awarded on each item bought as follows

Price equal or above 500 = 5%

Price of below 500 =10%

- **PULLOVER** = $0.95 * \$ C \$ 4$
- **TIE** = $0.9 * \$ C \$ 5$

▪ *Award 2 marks each max 4*

- (b) Mention three ways of disseminating processed information to the users

- **Electronic presentation through radio and television**
- **Distribution of hard copies**
- **Broadcasting through the internet**

Award 1 mark each max 3

(c) Outline three methods that can be used to prevent transcription errors during data entry

- *Use devices that capture data directly from source*
- *Use of validation rule to prevent entry wrong data.*
- *Carry out data verification*

Award 1 mark each max 3

18.

(a) Why is a control panel referred to as a computer toolbox

- *It provides tools used to maintain and make changes in the computer set up*

Award 2 marks max 2

(b) State three functions of the recycle bin

- *Hold deleted files temporarily*
- *Restore deleted files*
- *Used to discard delete files from the computer*

Award 1 mark each max 3

(c) Give the functions of the following disk management operations

Disk defragmentation

- *To collect files together so that they can be accessed faster*

Disk partitioning

- *In order to run two operating system on the same computer*
- *For Backing up*

Formatting

- *To create sectors so that data can be stored on the disk*

Award 1 mark each max 3

(d) Describe the following features of Spreadsheet

(i) Automatic recalculation (2marks)

- *The spreadsheet automatically changes the results of a formula when the values within the formula are changed*

Award 2 marks max 2

(ii) WhatIF

- *This is a feature that is used to predict the future trends in a particular field.*

Award 2 marks max 4

(e) What is filtering

- *Is a quick and efficient method of finding and working with a subset of data in a list*

Award 1 mark max 1

(f) Name four number format applied in Microsoft Excel

- *General*
- *Currency*
- *Date*
- *Fraction*

Award ½ mark each max 2

19.

(a) Describe the following data types as supported by Ms-Access

(i) Calculated

- ***This is a data type that is used to store data created from a formula.***

(ii) Auto number

- ***This is a numerical value used in ms-access to automatically increase the values in a field***

(iii) Attachment

- ***Used to store one or more files containing pictures , sounds or videos of word document.***

Award 1 mark each max 3

(b) Briefly describe how a relationship can be established between

(i) Husband and Wife



- ***One to one. for one particular husband , he can only have only one wife 1mk***

(ii) Student and Subject



- ***One to many – for one particular student he or she can take more than one subject 1mk***

Award ½ mark each for the diagram max 1

(c) Explain four types of action queries

- ***Make table query – used to create a new table from the dynaset of a query***
- ***Delete query –delete specified table from one or two tables***
- ***Append query – add data in a table from on or more table***
- ***Update query – change the data within the table so that the table reflect the current position***

Award 1mark each max 4

(d) The table shown below is an extract from a database use it to answer questions that follow

PNo	National ID	First Name	Last Name	Date Employed	Salary	Gender
201	12234	Faith	Karembo	16-03-2009	4000	M
203	12454	Alice	Malaika	16-03-2010	3700	F
207	22734	Daniel	Nzomo	16-03-2012	6000	M
208	12234	Patricia	Moraa	16-03-2011	3800	F

(i) Choose the most appropriate data type for Gender and PNo

- ***Gender – short text***
- ***Pno – number***

Award 1mark each max 2

- (ii) Given that table name is employee Records write a sql statement that can be used to display the following fields in the dynaset First Name, PNo, Last Name and Salary >5000 (3marks)

SELECT [employees Records].First Name. [employees Records]. PNO, 1mark
 [employees Records]. [Last Name]
FROM [employees Records] 1mark
WHERE ((([employees Records]. [Salary])>`5000`)) 1mark

20.

- (a) State four ways in which computer virus can be prevented

- **Smart browsing/avoid suspicious links**
- **Avoid opening mail attachment before scanning them for virus**
- **Avoid using removable storage devices**
- **Installing and updating of an anti-virus software**

Award 1mark each max 4

- (b) Give two reasons to justify why unstable power supply is considered as security threat

- **It may lead to data loss**
- **May damage the sensitive parts of the computer cause malfunction**

Award 1mark each max 2

- (c) Briefly explain how software piracy can be minimized especially in developing countries

- **Make software cheap to increase affordability. this ensures that only copyrighted software is used by everyone**
- **Set installation password. This helps to deter illegal installation of the password.**
- **Enacts laws to take care of intellectual property right**

Award 1mark each max 2

- (d) Distinguish between the following pair of terms (4marks)

(i) Uploading and Downloading

- **Uploading refers to the process of transferring information from a local computer to the internet while downloading refers to the process of transferring information from a remote computer to a local storage**

(ii) Blog and Portal

- **A blog is website that contains personal information that can easily be updated while a portal is specialized website that offers restricted services.**

Award 2marks each max 4

- (e) Describe two factors that affects the provision of internet based services

- **Speed of the internet service provider. The faster the speed the faster the provision of internet based services.**
- **Reliability of the data terminal equipment.**
- **Internet coverage. Internet based services are limited to areas with internet connectivity**

Award 1mark each max 2