ST. MARY'S SCHOOL –RUNDA

Name………………………………….…………………

Class………………………………………….…………

Adm. No …....…………

Date ……………………

Class ………………..……

COMPUTER STUDIES

HOLIDAY ASSIGNMENT

Instructions to candidates
a) Write your name and admission number in the spaces provided above.
b) Sign and write the date of examination in the spaces provided above.
c) Answer all the questions in the spaces provided (**ALL** questions are compulsory)
d) Check the question paper to ascertain that all the pages are printed as indicated and no questions are missing.

4.9 COMPUTER STUDIES (451)

4.9.1 Computer Studies Paper 1 (451/1)

SECTION A (40 marks)

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

1. State **two** ways in which a computer could be used in the health care sector other than record keeping. (2 marks)

2. State **four** operations that may be performed on a file by an operating system. (2 marks)

3. Explain the term *website* as used in the Internet. (2 marks)

4. Explain a reason necessitating governments to enact data protection laws. (2 marks)

5. The following data is to be entered in spreadsheet cells:

   (a)   0922   111   000

   (b)   31/01/2022

   State the cell format, other than the text format, that can be applied to the respective data cells in order to appear as it is. (2 marks)

6. When an image inserted in a desktop publishing document is selected, handles on its place holder appears. State **three** uses of these handles. (3 marks)

7. State a circumstance under which dry-run testing is performed when developing a program. (2 marks)

8. State **two** ways in which data validation is implemented on an input form of a database application. (2 marks)

9. Mikal has been employed as a computer trainer in an organisation. State **three** roles that she is likely to play in the organisation. (3 marks)

10. List **three** electronic data processing modes used in computers. (3 marks)

11. Distinguish between *data collection* and *data capture* as used in data processing. (4 marks)

12. Describe each of the following features of a graphical user interface operating system:

    (a)   Pointer (2 marks)

    (b)   Desktop (2 marks)

13. State a circumstance under which each of the following input devices may be used:

    (a)   Optical character reader (1 mark)

(b) Optical mark reader (1 mark)

14. State the characteristics of an impact printer. (3 marks)

15. Describe each of the following features of a word processor:

(a) Hyphenation (2 marks)

(b) Status bar (2 marks)

SECTION B (60 marks)

*Answer question 16 and any other **three** questions in this section.*

16. (a) The following are segments of programming languages **A** and **B** respectively:

```
A  00100
   00111
```

```
B  SELECT name, class
   FROM studentsDetails
   WHERE House= "Athi Boys"
```

(i) Identify the generation of programming language used in each respective segment. (2 marks)

(ii) State **two** advantages of each of the generation of programming language labelled **A** and **B**. (4 marks)

(b) An organisation intends to increase salaries of employees using the following rates:

Current Salary	Percentage Increment
Greater than or equal to 70 000	5%
Greater than 50 000 and less than 70 000	8%
Less than or equal to 50 000	10%

Write a pseudocode that reads the total population of employees in the organisation and then performs the following for each employee:

- Reads the current salary
- Compute the increment
- Display current salary, increment and the new salary.

Hint: increment = current salary × percentage increment rate (9 marks)

17. (a) Distinguish between *octal number system* and *binary number system*. (4 marks)

(b) Subtract 17_{10} from 23_{10} using 8-bits one's complement leaving the answer in binary notation. (4 marks)

(c)   State **four** ways in which a graphic designer would use a computer in a media company.

(4 marks)

(d)   State **three** functions of an operating system in respect to disk management.   (3 marks)

18.   (a)   Explain **three** benefits of e-commerce to a company that deals with importation and selling of cars.   (6 marks)

(b)   A systems analyst intends to study an existing system. State **five** reasons for this study.

(5 marks)

(c)   Distinguish between *usability testing* and *functional testing* as used in system development.

(4 marks)

19.   (a)   Explain the purpose of each of the following features of a spreadsheet chart:

    (i)   Legend   (2 marks)

    (ii)   Data series   (2 marks)

    (iii)   Data marker   (2 marks)

(b)   A school intends to install a computer network. Explain **three** challenges that the school may experience after the installation.   (6 marks)

(c)   Xpat ICT company has been tasked to construct a network for an organisation. Explain **three** factors that the company should consider when selecting the media for the connectivity.

(3 marks)

20.   (a)   State the functions of each of the following protocols as used in computer network:

    (i)   SMTP   (1 mark)

    (ii)   FTP   (1 mark)

    (iii)   DNS   (1 mark)

(b)   State **two** characteristics of each of the following network topologies:

    (i)   Mesh topology   (2 marks)

    (ii)   Ring topology   (2 marks)

(c)   With the aid of a diagram, describe a centralised computing configuration.   (4 marks)

(d)   Explain each of the following computer security threats:

    (i)   Social engineering   (2 marks)

    (ii)   Vulnerability.   (2 marks)

1. (a) Open a word processing program and type the following passage as it appears. Save the document as **GIS1**. (20 marks)

PURPOSE OF GEOGRAPHICAL INFORMATION SYSTEMS

People want to understand their own individual environment. By environment, we mean the geographical space of their study area and the events that take place.

For example:

(a) an urban planner may want to know about city population, traffic etc.
(b) a biologist may want to understand the population of animal species.
(c) a geologist may want to study about building site areas, minerals deposits etc.
(d) a hydrologist may be interested in water quality, land physiographic features, runoff generation etc.

All these professionals require data that relates to space and typically involving positional data. Positional data determines where things are, where they were or will be in future.

QUESTIONS A GIS CAN ANSWER		
A	Location	What is at a given location?
B	Condition	What are the locations where certain conditions are met?
C	Trends	What are the differences within an area over time?

A location may be described using place name, postcode, or geographic reference such as latitude/longitude, or x and y coordinates and may include:

■ Location where certain conditions are satisfied are such as:

● Un-forested section measured in square units of area.
● Distance from the roads.

■ With soils suitable for supporting buildings.

Trends seek to find the differences for example in land use or elevations within an area over a period of time.

Functional components of GIS

Data Input

Database

Query and Analysis

Output and Visualisation
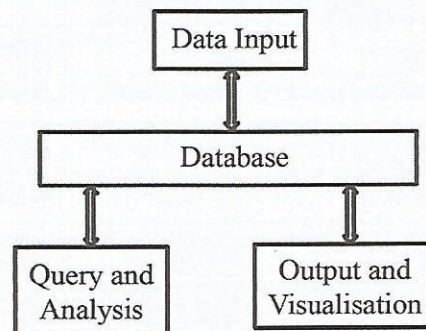
(b) Create a copy of the passage into a new blank document and save it as **GIS2**. (2 marks)

(c) Perform each of the following on the document:

(i) Format the passage title as follows:

I. Font size 20 (½ mark)

II. Apply an outline effect (½ mark)

(ii) Apply a two lines drop cap to the first two characters of the first paragraph. (2 marks)

(iii) Apply indent format to the listed numbered and bulleted lists of size 3 cm from the left and 1.5 cm from the right. (4 marks)

(iv) Apply each of the following to the bulleted and numbered lists:

I. Line spacing of 1.5 (2 marks)

II. Justified alignment (2 marks)

(v) Apply two columns layout with line between. The first column should contain the information between the table structure and the sub-heading "Functional components of GIS". The second column should contain the rest of the information from the "Functional Component of a GIS". (3 marks)

(d) (i) Convert the table structure to text separated by tab characters. (2 marks)

(ii) Apply each of the following to the structure chart drawn:

I. Group to all the objects of the drawing. (1 mark)

II. Shadow effect to the grouped object. (1 mark)

III. An automatically numbered caption with text "Components of GIS". (2 marks)

(e) (i) Enter your name and your index number at the page footer aligned to the right. (2 marks)

(ii) Apply a page border line of width 3pt. (2 marks)

(iii) Apply automatic upper case roman page numbering at the top centre of the page (2 marks)

(f) Save the changes and print out later each of the following documents:

(i) **GIS1**

(ii) **GIS2** (2 marks)

2. A group of youths decided to invest together. They intend to use a database management system to manage their shares.

    (a)   Open a database program and create a database named **Pamoja.** (1 mark)

    (b)   (i)   Create a table named **Membership** in the database created in 2(a). The table should have the following fields and respective specifications. (8 marks)

Field Name	Data Type	Properties
MemNum	Text	Size 4 (primary key)
FirstName	Text	Size 10
LastName	Text	Size 10
DateofBirth	Date/Time	Short date
Gender	Text	Look up from a listbox with values "Male", "Female"

        (ii)   Create a second table named **Contributions** having the following fields and respective specifications. (10 marks)

Field Name	Data Type	Properties
RefNumber	Text	Size 4 (primary key)
MemNum	Text	Lookup from membership table
AmountPaid	Currency	
DatePaid	Date/Time	Short date
PaymentMode	Text	Lookup from a list box with values "Cash", "Cheque", "Mobile Money"

        (iii)   Create a relationship between the tables and enforce referential integrity constraints to the relationship. (2 marks)

    (c)   (i)   Create a form for each of the table created. Save the forms as **MForm** and **ContriForm** respectively. (2 marks)

        (ii)   Enter the following data into their respective tables. (8 marks)

Membership Table

MemNum	FirstName	LastName	DateofBirth	Gender
SH1	Maureen	Antonio	31/12/2001	Female
SH2	Jacob	Andela	24/09/2001	Male
SH3	Charles	Zablon	01/09/2001	Male
SH4	Judy	Alexander	14/02/2002	Female
SH5	Isaac	Marion	04/08/2001	Male

Contributions Table

RefNumber	MemNum	AmountPaid	DatePaid	PaymentMode
1	SH1	10,000	27/04/2018	CASH
2	SH2	8,000	28/04/2018	MOBILE
3	SH3	9,000	30/04/2018	CASH
4	SH4	12,000	27/04/2018	CASH
5	SH5	11,000	28/04/2018	MOBILE
6	SH1	15,000	28/05/2018	CHEQUE
7	SH2	11,000	29/05/2018	MOBILE
8	SH3	9,500	30/05/2018	CHEQUE
9	SH4	7,500	28/05/2018	CASH
10	SH5	11,000	27/05/2018	CHEQUE
11	SH1	7,000	29/06/2018	CASH

(d)   Create a query that would display the following fields:

(i)   *MemNum, FirstName, LastName, Gender* and a calculated field named *Umri* to display the age of each member. Save the query as **AgeQ.**   (4 marks)

(ii)   *MemNum, LastName, AmountPaid* and a calculated field named *Dividends* which would display 14% for each AmountPaid. Save the query as **DividendsQ**.   (4 marks)

(e)   (i)   Create a report based on the query **DividendsQ** showing all the fields in the query and the following:

I.   Total AmountPaid by each member.
II.   Total Dividends payable to each member.
III.   Grand Totals of AmountPaid and dividends payable.
   (6½ marks)

(ii)   Modify the report to appear as follows:

I.   To have a report title **"DIVIDENDS FOR THE YEAR ENDED 31 DECEMBER 2018".**   (1 mark)

II.   Underline the report title.   (½ mark)

III.   Save the report as **"YearEndRPT"**   (½ mark)

(f)   Print out later each of the following:

(i)   The two tables   (1 mark)

(ii)   The two queries   (1 mark)

(iii)   The report.   (½ mark)