**PAPER ONE**

**MARKING SCHEME**

1. Define pixels as used in monitor   (2mks)

  **A dot on the screen used to display information**

1. Give an explanation why computer laboratory should have (2mks)
2. Good ergonomics

**To protect the users from strains caused by poor sitting posture**

1. Uninterruptable power supply

**To protect computers from power instabilities**

1. Highlight two measures that need to be put in place to avoid risks associated with electric shock (2mks)

**Avoid using liquids**

**Ensure that there are no naked wires**

1. a)   Explain two functions of network servers (2mks)

**Avails resources to the clients**

**Responds to clients request**

**Ensures security of the computers**

 b)    i)          Define the term crosstalk as used in networking (2mks)

**Unwanted coupling between signal paths**

               ii)        Explain briefly how the token ring network functions (2mks)

**Adjacent computers are joined to each other to form a complete ring and the communication is done through a packet called token which is held by a computer that wants to pass a message**

1. State four advantages of computerised simulation and modelling (2mks)

**It is cheaper to develop and test**

**It can accommodate many more testing variables than the actual object**

**It takes less time to develop virtual models than real objects**

**It is easier** **remove errors**

1. Explain two parts of a task bar (2mks)

**Start button**

**System tray**

**Task manager**

1. Describe TWO elements of Graphical User Interface (2mks)

**Window**

**Pointer**

**Icons**

**menu**

1. State two types of computer viruses (1mk)

**Hoax boot sector Trojan horse**

1. Explain two application areas of artificial intelligence (3mks)

**Expert systems natural language processing artificial neural networks**

1. Differentiate between indent and tab as used in word processing:     (2mks)

  **Using the tab key to move a cursor at a set interval, indent is moving line or lines of text away from the margin**

1. a)   What is a section break as used in word processing    (2mks)

**Section breaks are used to create layout or formatting changes in a portion of a document**

b)      Describe two types of section break. (2mks)

The **Next Page** command inserts a section break and starts the new section on the next page. This type of section break is especially useful for starting new chapters in a document

The **Continuous** command inserts a section break and starts the new section on the same page. A continuous section break is useful for creating a formatting change, such as a different number of columns, on a page.

The **Even Page** or **Odd Page** command inserts a section break and starts the new section on the next even-numbered or odd-numbered page. If you want document chapters always to begin on an odd page or on an even page, use the **Odd page** or **Even page** section break option.

1. Susan, the director of an organization, had an important meeting in another country. Instead of going there, she decided to participate using video conferencing.
2. Explain video conferencing (2mks)

**It involves the use of computers, video cameras, audio capturing equipment and high speed voice and data communication networks to enable two or more people in geographically different areas virtually see and talk to each other face to face.**

1. Give two advantage of using video conferencing (2mks)

**The cost of communication via the internet is lower**

**It saves on travelling costs**

**It saves on time**

1. Samu also wants to buy a printer because he frequently prints photos. He is uncertain whether to get a laser printer or an impact printer. Which printer should he buy and why? (2mks)

**Laser printer. This is because the quality of printout is high when this printer is used and quality is very important in photos**

1. What does CMOS stand for (1mk)

**Complementary metal oxide semiconductor**

1. Study the following sample advert that was extracted from a newspaper and answer the questions that follow

*Dell optiplex GL380 Desktop*

*Intel Duo Corei3-550 processor*

*23" TFT*

*4GB DDR2 RAM*

*750GB hard drive*

*Windows 7 Home Premium*

*Built-in wireless networking*

*Wireless keyboard and mouse*

1. Explain the meaning of each statement in the extract (3mks)

**The computer is a dell model**

**The processor is an Intel product**

**Ram holds a maximum of 4 billion characters**

1. Identify three main determinants of the price of the computer (3mks)

**Speed of the processor**

**Memory capacity**

**Type of monitor**

**SECTION B** (60 marks)

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

1. a)  The factorial of an integer number is defined as the product of the number from 1 up to and including the number. Thus three factorial, 3!, is equal to3\* 2\*1 which is 6. Draw program flowchart that will allow the user to enter a positive integer, compute and display the factorial of the value entered. (7mks)



b) Write a pseudo code for the above program (6mks)

**Pseudo Code:**

**1. Enter an integer into location N
2. If n less than 0 display error message and go to step 8 Done.
3. Set factorial results Fact to 1.
4. If N is not greater than 1, display Fact and to to step 8 Done.
5. Set Fact equal to Fact \* N.
6. Set N equal to N-1.
7. Go to step 4.
8. Done**

1. Suppose the user entered integer 5 as the input in the above program. Use the flowchart to dry run and give the output that will be displayed by the program.(Show your working) (2mks)

**5\*4\*3\*2\*1=120**

1. a) What is the hexadecimal equivalent of 5378 (3mks)

**15F**

b) Use two’s compliment to solve the following (leave your answer in binary) (2mks)

 1210-1710

1. State two examples of unguided transmission media (2mks)

Sol. Radiowaves, infrared waves and microwaves

1. Differentiate between job displacement and job replacement with reference to Impact of ICT on society *(2mks)*

Disp. – jobs initially done manually are now computerized hence the employees who do not have the relevant computer skills may be moved to other manual jobs.

Replacement -

1. With the current ICT trends, it is possible to work from home 4mks)

*i) State two advantages of working from home*

 time and money saving

 no supervision

*ii) State two disadvantages of working from home*

 overworking or under working

 interference from family members (any other good point)

1. Convert 5.12510 to its binary equivalent. (2mks)
2. (a.)Explain the following terms in reference to the network (4mks)
3. Multiplexing and Demultiplexing

Multiplexing – sending multiple data signal over the same medium

Demultiplexing – process of separating multiplexed signals at the receiving end.

 (ii) Simplex and half duplex transmission

 Simplex – communication in one direction

 Half duplex – communication in both directions one at a time.

 (b.) Explain three types of physical network topologies (6mks)

 Star topology -

 Bus topology -

 Mesh topology

 Hierarchical topology

 (c.) Explain three demerits of social media such as ***facebook*** in modern society (3mks)

 Family conflicts

 Socialization in facebook leads to people becoming antisocial

 Anti social behaviour

 (d.) Define telecommuting (2mks)

This is the working from home

1. a) List three ways in which data integrity can be compromised. (3mks)
* data rendundancy
* piracy

b) Distinguish between spyware and antispyware. (2mks)

spyware – program used to check the system

c) Describe biometric security. (2mks)

This is the use of human features that are unique. i.e. eyes, fingerprints

d) Describe five types of Read Only Memory. (5mks)

- Mask ROM

-PROM

-EPROM

-EEPROM

e) Highlight the indications of a computer infected by a virus. (3mks)

- Hanging

- Re-starting by itself

- indicating full memory status

1. a) On her first day at work as a school librarian, Sera notices that book records are kept manually using a card system. She suggests to the Principal that they use a database. State three reasons why using a database would be helpful to the librarians (3mks)

**Unnecessary duplication**

**Time wastage**

**Poor update of records**

1. Give four examples of DBMS programs which could be used. (2mks) **Lotus approach, Ms access, ms SQL server, Oracle, DbaseIV**
2. The manager of Pacific Company Ltd uses a database to keep records of his employees as shown in the table below. Use this information to answer the questions that follow.



1. Name and explain the appropriate data type for

ID: **text** (1mk)

Age: **number** (1mk)

Salary **currency** (1mk)

1. Write a query to display details of employees working in the Administration department

 (3mks)

**Select \* from table where department=”administration”**

1. The function =AVERAGE (B2:B8) in cell B9 has been copied and pasted to cells C9 to K9 in spreadsheet.
2. What would be the formula at cell D9 (2mks)
3. Explain the type of cell referencing used in the above formula (2mks)

**Relative cell referencing**