

451/1
COMPUTER STUDIES
PAPER 1
JULY / AUGUST 2008

MARKING SCHEME

SECTION A (40 MARKS)

1. Anthony a student at mireri technical college defines a computer as “an electronic device which accepts, processes data and produce information depending on its decisions.” Was this student right? Explain you answer.
 - No½ computer cannot½ make their own decisions

(1mk)

2. Output from the computer can normally be in several forms. Give the difference between the following methods.
 - (a) Microfiche and microfilm
 - Microfilm is a strip of photography film on which highly miniaturized reproductions has been recorded.
 - Microfiche- a sheet of reduced photographs. A sheet of microfilm containing information laid out in grid pattern

(2mks)
 - (b) Soft copy and hard copy
 - Soft copy –output that is intangible e.g. sound light and on screen.
 - Hardcopy –output on hard /tangible materials e.g. papers and microform

(2mks)

3. Define the program documentation and give two examples of such.
 - Tutorials, instruction and reference information provided to explain how to install and use a software.

(3mks)

4. Define the data processing cycle.
 - The chain of processing events in most data processing application (recording, transmission, reporting, storage and retrieval of data.)

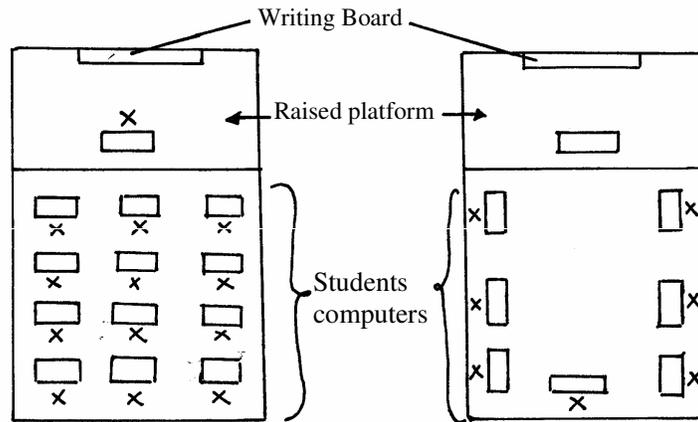
(2mks)

5. What is data security?
 - Protection of programs and data in computers and communications systems against unauthorized modification, destruction, disclosure or transfer whether accidental or intentional.

(1mk)

6. Explain any two computer laboratory layouts commonly employed in learning institutions.
 - Conference pattern- where computers are arranged in such a way that they form a U shape.
 - Classroom Pattern – computers are arranged in such away that students sit facing the writing board
 - Accept diagrams in place of explanation.

(2mks)

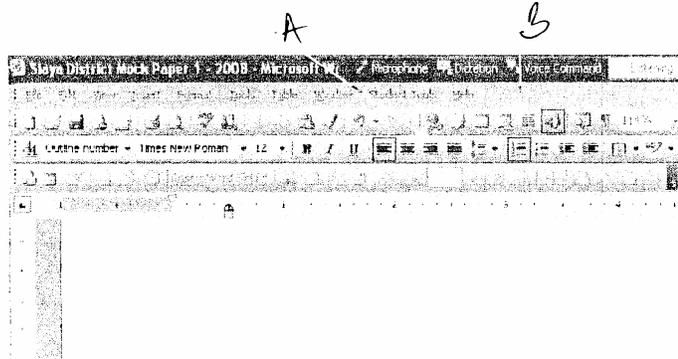


7. Explain the meaning of the following terms as used in computer data transmission.
- Simplex transmission.
 - Data is transmitted in one direction only.
 - Half duplex transmission
 - Data is transmitted in two directions but only in one direction at a time.
 - Full duplex transmission
 - Data is exchange between two devices in both directions simultaneously.
- (3mks)
8. What are the four major parts of a database system?
- Data
 - Hardware
 - Software
 - Users /liveware
- (4mks)
9. Give the difference between machine language and assembly language
- Machine language is the computers own binary base language. Assembly language is a low level language consisting of mnemonic codes and symbolic addresses corresponding to machine language instructions.
- (2mks)
10. List any two functions of a computer scientist.
- Developing and advancing uses of virtual reality programming,
 - Theoretical expertise
 - Creation and application of new technology
 - Designing programming tools.
- (1mks)
11. Differentiate between a device and a device driver.
- A device driver is a software component that permits a computer system to communicate with a device. A hardware component of the computer.
- (2mks)
12. (a) Differentiate between an electronic spreadsheet and the traditional analysis sheet
- Manual spreadsheet are paper and pen spreadsheets in which error correction is normally hard while electronic spreadsheets are computer base spreadsheets which are easier to work with.
- (3mks)
- (b) Explain how you would change the name of a worksheet in Microsoft excel ®

Method 1 –right click on the name tab of the worksheet to be renamed, select rename then type the new name

(2mks)

13. Below is a graphical representation of a section of a Microsoft word ® application window. Use it to answer the question that follow.



Give the uses of the icons labeled A and B

A –Right align text

B- Create columns in a document.

(2mks)

14. (a) List two examples of desktop publishing softwares.

- Quarkxpres
- PageMaker
- Adobe indesign
- Corel Ventura
- Serit page plus
- Adobe PageMaker
- Microsoft publisher
- Corel draw

(1mk)

- (b) Differentiation between save and save as as used in most windows applications.

- Save command is used to save changes in an already saved document.
- Save as command is used to save a new unnamed document or to save an existing document using a new name.

(2mks)

15. Define the following internet related terms.

- a) Internet protocol
Set of rules that govern the use of the internet.
- b) Search engine
Computer software that compiles list of documents on the World Wide Web and their contents.
- c) Browser
Program that allows a computer to locate, down load and display. Document containing text graphics sounds videos, animation located on a computer network.
- d) E- learning
Learning over the internet.
- e) Uniform resource location.
A method of naming files or place on the internet.

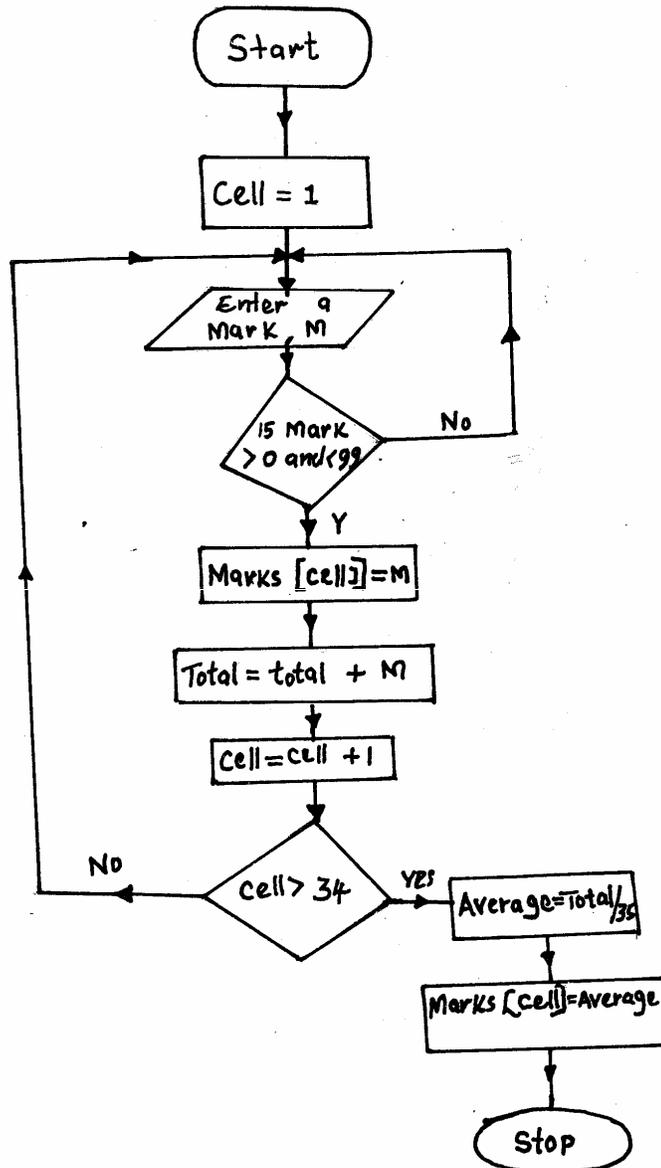
(5mks)

SECTION B (60 marks)

Answer question 16 any other THREE questions from this section in the spaces provided.

16. A 16 cell one dimensional array, marks holds the marks of a computer examination for 35 students. You are given that the marks which are out of 100 will be entered at the keyboard and that mark must be between the range of 0-99 inclusive, and that after the element have been placed in the array, the average are computed and stored in the last of the array.

a) Draw a flowchart to represent this logic. (8mk)



b) List any three program control structures used in programming

- Sequence
- Repetition
- Selection

(3mks)

c) Give two differences between high level and low level languages
High level

- Machine independent
- programming is not time consuming
- translation not required

Low level

- Machine oriented
- program writing time consuming
- translation necessary for execution

- d) Differentiate between source code and object code
Source code; human readable program statements written in a high level or assembly language.
Object code –code generated by a computer or an assembler (machine code) (2mks)
17. (a) Explain the meaning of the following term in relation to spreadsheet (2mks)
- i) Column
Vertical worksheet division identified by letters/ vertical arrangement of cells.
- (ii) Function
An inbuilt formula
- (iii) Legend
A reference list that serves as an explanation of the symbols on an excel graph.
- (iv) Range
A block of cells selected for familiar treatment.
- (v) Cell
An intersection of a column and a row. (5mks)
- (b) What do the following Microsoft excel ® error value mean?
- (i) # NULL!
The formula refers to an invalid range.
- (ii) # DIV/0 !
The formula is trying /attempting to divide by zero
- (iii) #VALUE!
The formula contains the wrong type of argument or operator. (3mks)
- (c) Briefly explain what you understand by the term ‘auto calculate’
A feature used to try out excel functions (2mks)
18. (a) Differentiate the term data and information
Data; Raw fact fed into the computer for processing/unprocessed facts
Information; result of data processing (1mk)
- (b) Explain any 2 causes of errors in data processing
User errors e.g incorrect data entry /pressing wrong keys .
Users accessing files / part of applications they are not suppose to.
Program bugs – errors in program logics (4mks)
- (c) List any four computer processing files
- Master file
- Transaction file
- Back up file
- Reference file. (2mks)
- (d) List two type of data representation used in computing
Number systems and their representation
Symbolic representation using coding schemes. (2mks)
- (e) Define the following terms
(i) Nibble
Half a byte, a group of 4 bits. (6mks)
- (d) Study the Microsoft excel ® worksheet extract below.

S.No	NAME	CLASS	ADM NO	TERM 1		TERM 2		TERM 3		AVERAGE	
				1	2	1	2	1	2		
16	ROBERT ODHLEMBE OGANJA	18	9338	58	58	61	59.5	63	50	41	53.83
17	ROHFACE ODOO KARANGA	18	9342	53	53	53	66	59	79	64	71.5
18	ROFRANIS ODOO ODHLEMBE	18	9346	54	54	54	65	71	73	68	63
19	ROSEMARY O. ODHLEMBE	18	9350	46	46	46	66	57	45	60	48
20	DENNIS ORENGO OCHIENG	18	9354	79	79	79	72	75.5	79	62	66
21	SYLVESTER O. OCHIENG	18	9356	54	54	54	62	58	63	68	62
22	JOSEPH E. OTIENO	18	9360	50	50	50	60	65	60	74	71
23	DOMINIC OCHIENG	18	9364	54	54	54	62	58	59	40	48
24	CURTICE O. OCHIENG	18	9370	44	44	44	66	55	62	42	52

- i. Give that the AVERAGE column N is gotten by getting the mean for term 1 to 3 averages write down a formula that can be used to obtain the AVERAGE mark for DENNIS ORENGO OCHIENG'

$$=(G127+J127+M127)/3 \quad (2mks)$$

- ii. Write down the function that you would use to compute the grade for the student in (i) above given that grading is done under the following condition;

Average marks; Below 29-E, 30-45-D, 46-59-C, 60-75-B and above 75A

(3 mks)

$$=IF(N127>75, "A", IF(N127>59, "B", IF(N127>45, "C", IF(N127>28, "D", "E"))))$$

(2mks)

- iii. Bit

A binary digit – smallest unit of data representation.

- iv. Word length

A measure of the number of bits in each word.

19. Define the following terms

- i) Data control

Measure taken to enforce the security of the programs & data

- ii) Computer errors

Occurrence of an incorrect result produced by the computer.

- iii) Sabotage

Occurs when a malicious user renders a system unusable by other.

(3mks)

- (b) Other than computer viruses errors and accidents discuss any three threats to a computerized system and explain the prevent measures that can be taken to avoid such threat.

- (i) Hacking – unauthorized access into a computer system logging of correctly choosing password and change the frequently encryption, biometrics

- (ii) Theft ! use of burglar proof doors and windows.

- (iii) System crashes; back up data.

- (iv) Floods, laboratory floor should be raised above ground level.

- (c) Explain what is meant by data backup and name three dangers of inadequate backup procedures?

Mirroring systems for restoration (01)

Dangers - Loss of data.

- Loss of hardware.

- Reprocessing efforts due to lost data

(4mks)

- (d) Explain the implications of the legislation prohibited publication'

Prevents undesirable publication from being published and distributed electronically e.g. hate mail and pornography.

(2mks)

20. (a) What is data privacy?

Controlling personal and confidential information and controlling what, how and when this information is communicated to others. (1mk)

(b) Explain any two negative effects resulting from the use of ICT on employment

Job displacement;

Job replacement

(4mk)

(c) Discuss any five ethical issues relate to the use of computers

- Information right and obligations

- Property rights

- Accountability and control

- System quality

- Quality of life

(10mks)