

BUTERE MUMIAS DISTRICT EXAMINATION
451 / 1
COMPUTER STUDIES
PAPER 1

MARKING SCHEME

SECTION A (40marks)

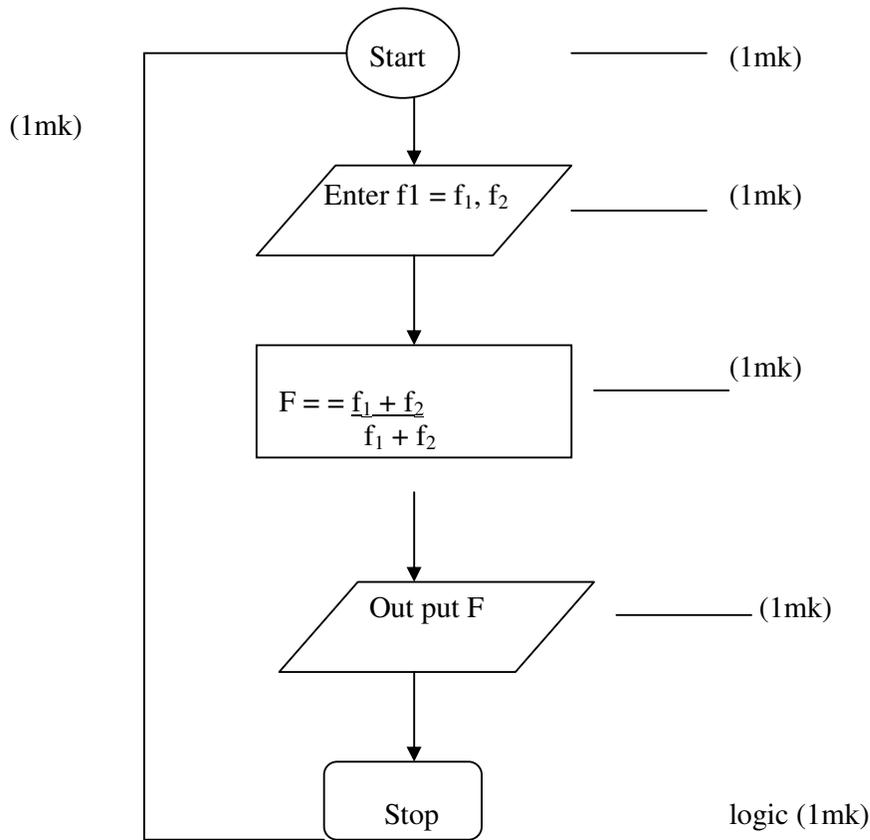
1. **Explain the following terms as used in information Technology with reference to software purchase:-**
- i) **User friendliness** (1mk)
Refers to how easy the software is to use for the user.
 - ii) **Authenticity** (1mk)
The genuinnessess , validity and / or legitimacy of the software.
2. **In system development testing is one of the critical stages. Give three reasons why the testing phrase is critical to the systems developer.** (3mks)
- Helps to ensure that the logical and physical designs and environment are to the users satisfaction
 - Helps to detect and correct errors.
 - Gives proof to those skeptical about the working of the system
 - Helps to establish how the system works under various conditions allowing for full description of the system capabilities.
3. **Give three ways in which a magnetic tape differs from a magnetic disk**
- | Magnetic disk | Magnetic tape |
|---|--|
| -Tracks are concentric | - Tracks are parallel and located lengthwise |
| -Move only in one play direction | - Move in two directions(forward and Backwards) |
| - Do not come in control with the read / write head | - Comes in contact with the read/ write heed |
| - Have shorter access time | - Have longer access time |
| - Data accessed by a number of methods | - Data accessed only by serial method. |
4. **Name the three components of a spreadsheet** (3mks)
- Database
 - Graphs
 - Worksheet
5. i) **What is a page header** (1mk)
- This are the words at the top of every page of document just above the page margin
- ii) **Differentiate between a page margin and a page border.** (1mk)
6. **State any two differences between function keys and special keys of a keyboard.** (2mks)
- | Function keys | Special keys |
|--|--|
| - Normally used single to execute a task. | - Normally used in combination with other Keys the execute a task. |
| - Initiate frequently done task to occur computer. | - Give special instructions to the |

7. i) **Give any two differences between margin guides and column guides as used in desktop publishing** (2mks)
- Column guides help to divide the pages into columns that make the publication look more organized and are within a page, a normally pink coloured while margin guides are around the edges of the printable page and are normally blue in colour.
- ii) what does the gutter in a word processor mean in relation to column settings? (1mk)
8. **State any three advantage of using microwaves to transmit data.** (3mks)
- Operate at a high speed
 - Have a huge transmission capacity
 - Are less prone to transmission errors
 - Are capable of transmitting both digital and analogue signals
9. **Name any three methods that can be used to test a program of errors** (3mks)
- Desk checking (Dry- run)
 - Using debugging utilities
 - Using test data.
10. **Give any three characteristics of systems** (3mks)
- Holistic
 - Subsystems
 - Boundary and environment
 - Purpose
 - Process
 - System entropy
 - Inputs and outputs
 - Open and closed system
 - Control
11. **Why is a computer referred to as an electronic device** (1mk)
- It utilizes electronic signals to process information
12. **Why is a mobile phone regarded to be a computer** (3mks)
- electronic device
 - having inputs / output device
 - programmable
 - process data at high speed.
13. **State any three reason why computers are a much more preferred machine to use in an office and business than other office machines.** (3mks)
- computers process data faster
 - computers are more accurate
 - computers are more efficient (they utilize minimum resources to process data)
14. **State any three factors to consider when preparing a computer laboratory** (3mks)
- security of programs and other resources
 - reliability of the (source of) power
 - the number of computers to be installed and available floor space
 - the maximum number of users that the laboratory can accommodate.
15. **state any two functions of a UPS** (2mks)
- supply power to computers when power abruptly fails temporarily
 - clean power to computers

SECTION B

- 16.a) i) **State any two advantage of low level languages.** (2mks)
- no translation

- processor execute them faster
 - are stable and hardly crash down once written
- ii) Explain in the following terms as used in high level languages. (1mk)
- Capsulation** (1mk)
- Having data and functions that operate on the data within an object
- Inheritance** (1mk)
- child module based on parent modules takes on all features of the parent module.
- iii) Give any two examples of fourth generation languages. (2mks)
- Visual basic, delphi pascal, visual COBOL,
- b) Draw a flow chart that would be used to design a program that would evaluate the value of F using the formula $F = \frac{f_1 + f_2}{f_1 + f_2}$ (5mks)



- c) From the flow chart developed in part (b) above write a pseudocode to do the same task as the flow chart (4mks)

(1mk) {

- Begin
- Enter the values of f_1 and f_2 (1mk)
- Calculate F
- $F = \frac{f_1 + f_2}{f_1 + f_2}$ (1mk)
- Output F - (1mk)
- end

17. a) Explain the following computer crime terminologies below

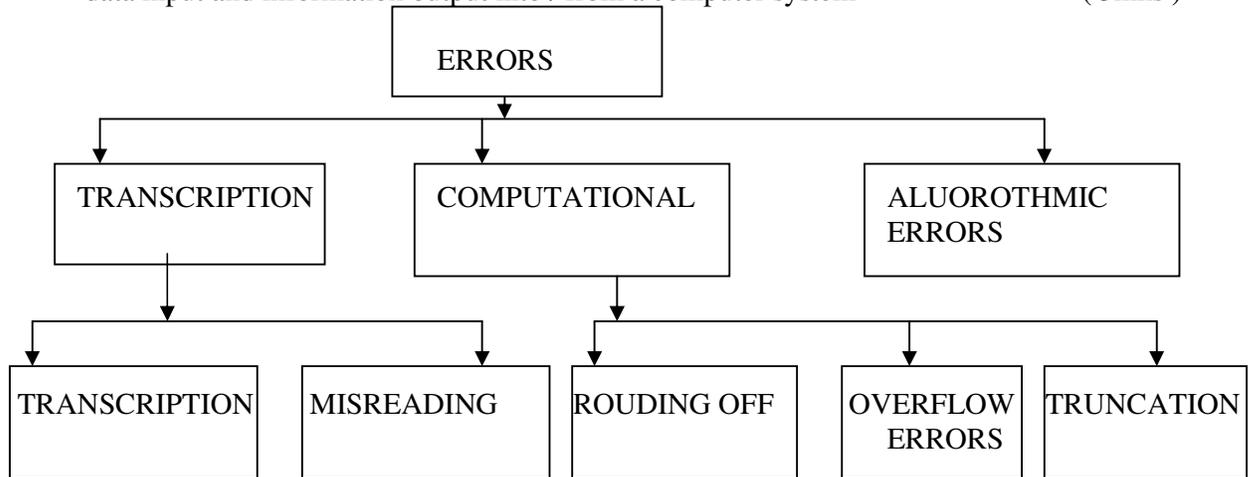
i) Hacking (1mk)

- Is breaking into a computer system to look at data, copy or modify data to which the person has no authority to access.

- ii) Tapping** (1mk)
 - Getting access to data while in transmission
- iii) Cracking** (1mk)
 - Is establishing of weak access points in a software by use of guess work or otherwise but normally the cracker has some idea about the system securities.
- iv) Piracy** (1mk)
 Making copies of copy righted software / data.
- v) Fraud**
 - Use of computers to conceal information or cheat other users with the intention of making a gain.
- iv) Sabotage** (1mk)
 - The illegal destruction of data and information with the aim of crippling service delivery or causing loss to a firm.
- vii) Alteration** (1mk)
 Changing of data / information without permission with the aim of gaining or misinforming the authorized users.
- b) Piracy is the worst computer crime that is scaring software developers out of their wits. Suggest any ways that can be instituted to reduce to reduce piracy** (4mks)
 - Enact laws that protect developers of software against piracy
 - Make software cheap enough to increase affordability
 - Use licenses and certificates to identify originals
 - Set installation passwords that deter illegal installation of software
 - create install once software.
- c) State any four measures that can be taken to detect, prevent computer crimes and seal security loopholes.** (4mks)
 - Audit trail
 - Data encryption
 - Log files
 - Firewalls.
- 18. a) Network software comes in two main categories. Name them** (2mks)
 - Network operating system
 - Network protocol
- b) (i) state any five unique network operating system software functions** (5mk)
 - Provides access to network resources
 - Enable nodes to communicate with each other more efficiently
 - Supports network services like network card drivers and protocols
 - Implementats network security features.
- ii) Name any two network operating systems** (2mks)
 windows NT, linux , Novell, windows 2000, windows 2003, unix.
- c) Explain the following advantages of networking**
- i) Sharing of resources** (2mks)
 The resources include data / information, files printers, software etc.
 - Users do not need to transfer data via removable media but sort straight saving on cost.
 - Centralized access to data / information leads to less time wastage hence greeter productivity.
- ii) Distributed facilities** (2mks)
 - The failure of the central computer does not affect the operations of other terminals
 - Processing load is shared equally hence no time wastage and high quality productivity.
- iii) Reliability** (2mks)

- Data can be transferred with minimum error from source to destination
- In use one computer breaks, users can still access data / information from the other computers using another computer on the network.

19.a) Complete the table below that classifies errors that influence the accuracy of data input and information output into / from a computer system (5mks)



b) Explain what data integrity is by clearly describing its measures (7mks)

It is the accuracy and completeness of data entered and information received from an information system.

It is measured by:-

1. **Accuracy** : how close an approximation is to the actual value.
2. **timeliness** : deals with being given at the right time
3. **Relevance**: refer to entered data being pertinent to the processing needs at hand and meeting the requirements of the process cycle.

c) State any three advantages of files using sequential file organization method

- Approach is simple to understand
- Locating a record requires only the record key therefore fast.
- Efficient and economical if the activity rate is high.
- Relatively in expensive input / output media and devices may be used.

20. a) A shopkeeper of a small shop at manga has bought a desktop computer to assist him in performing his business activities. He has been advised that before he can use it to work he has to install it with an operating system. State any six factors to consider when choosing the operating system (6mks)

1. Hardware configurations (memory size, type of processor; speed)
2. Basic design of the computer e.g IBM or IBM compatible or apple
3. Applications intended for the computer
4. User friendliness or human computer interface
5. Availability in the market
6. Cost
7. Reliability

b) With reference to disk management explain what is meant by the terms below.

- Formatting** (1mk)
 - Preparing disks for data storage by creating sectors and tracks on the disk surface.
- Defragmentation** (1mk)
 - The rearrangement of scattered files on a storage media in order to speed up access to files.
- Disk partitioning** (1mk)

- The process of dividing a large physical disk into two or more portions / logical drives or volumes.
- c) **Give any two reasons that may make the shopkeeper to partition the computer disk(2mks)**
- In order to install more than one operating system on the same disk.
 - In order to be able to make back up on the same disk.
- d) **The shopkeeper one day switched on the computer and experienced a number of problems with windows operating system that he had installed. The problems included failure to load the operating system during the booting. After several trials of switching on the computer booting, it hang so often alongside abnormal restarting. State any four possible causes for the computer's behaviour.** (4mk)
- Hardware conflict or incompatibility possibility due to interrupt requests or missing device drivers.
 - Possibility of a problem in the installation process
 - Problem with hard disk boot sector due to damage or virus attack
 - Insufficient memory
 - Corrupted system windows registry.