THE UNITED REPUBLIC OF TANZANIA

PRIME MINISTER'S OFFICE

REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT

BUKOBA MUNICIPAL COUNCIL

FORM TWO DISTRICT MOCK ASSESSMENT

COMPUTER SCIENCE MARKING GUIDE.

1. (@1 MARK)

i	ii	iii	iv	v	vi	vii	viii	ix	x
B	B	A	C	A	D	C	D	B	A

2. (@1 MARK)

i	ii	iii	iv	v
E	D	C	B	A

3. (10 MARKS)

(a) Cybersecurity is the practice of keeping Computer systems, networks and data safe from hackers or other unauthorized access. **(2 marks)**

It includes using technology, rules and safety measures to prevent cyber-attacks.

(b) Importance of studying cybersecurity **(4 MARKS) any four points @ 1mark**

i. People can keep data safe
ii. Prevent identity theft
iii. Prevent cyber attacks
iv. Prevent cybercrime
v. Support safe use technology
vi. Support safe online transactions

(c) Authentication is the process of confirming that person or system is truly who the claim to be before allowing access to sensitive systems, data or account**. (1 MARK)**

(d) Three common authentication method used in cybersecurity practices **(3 MARKS) @1 mark**

i. Username and password – these are a traditional method in which users enter a secret combination known only to them.
ii. Biometrics – uses unique physical characteristics like fingerprints or facial features for identity confirmation
iii. Two – Factor Authentication (2FA) – adds an extra layer requiring not only a password but also a second verification method like a code sent to a phone

4. (10 MARKS)

(a) Digital signature used to **(only one point 1 mark)**

- ✓ Secure online transactions, emails and important documents.
- ✓ Prevent fraud and protect the integrity of information
- ✓ Build trust and ensure security in the digital world
- ✓ Verify authenticity
- ✓ Save time improve efficiency
- ✓ Provide non-repudiation

(b) Five steps for creating a digital signature **(5 Marks)**

i. Open your email client's settings or options.
ii. Look for sections related to "Security", "Certificate" or "Digital Signatures".
iii. Import or select the digital certificate you obtained.
iv. Within the email client's security settings, enable the option to sign emails digitally.
v. You may have the option to sign all outgoing emails or sign emails individually.

(c) Importance of sign out of your email account **(4 marks) any four points**

i. Prevent unauthorized access
ii. Maintains user privacy
iii. Reduces risk on shared or public devices
iv. Prevent accidental actions
v. Avoid session hacking
vi. Protect sensitive information
vii. Supports account security practices

5. **(10 MARKS)**

a) Computer Handling and Care (2 marks)

Refers to proper use, maintenance, and protection of computer equipment to ensure safety and long life.

(b) Devices for Power Fluctuation (4 marks)

Any four:

- UPS
- Stabilizer
- Surge protector
- Generator
- Inverter

(c) Risks of Poor Handling (4 marks) any four

- Data loss
- Hardware damage
- Electric shock
- Virus infection
- System failure
- Reduced computer lifespan

6. (a) Troubleshooting (1 mark)

Troubleshooting is the process of identifying, diagnosing, and solving problems or faults in a computer system or device.

(b) Steps of Troubleshooting (6 marks)

1. Identify the problem
2. Establish a theory of probable cause
3. Test the theory
4. Establish a plan of action
5. Verify system functionality
6. Document findings

(c) Common Categories of troubleshooting **(3 marks) any three.**

i Hardware troubleshooting
ii Software troubleshooting
iii Performance troubleshooting
iv Electrical troubleshooting

7. (a) Define the following terms (4 marks - 1 mark each)

(i) Problem Solving:

Problem solving is the process of identifying a problem, analysing it, and developing a logical step-by-step solution to resolve it.

(ii) Algorithm:

An algorithm is a step-by-step set of instructions used to solve a specific problem or perform a particular task.

(iii) Pseudocode:

Pseudocode is an informal way of describing the steps of an algorithm using simple language that resembles programming code but is easy for humans to understand.

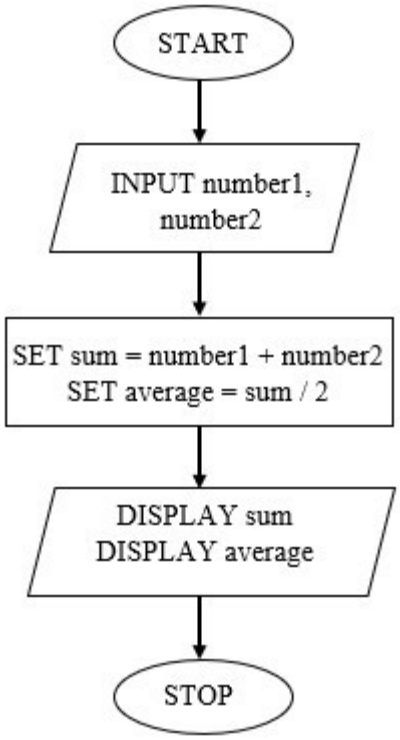
(iv) Flowchart:
A flowchart is a graphical representation of an algorithm that uses symbols and arrows to show the sequence of steps in solving a problem.

(b) (b) Pseudocode and Flowchart (3 marks)

Pseudocode

```
START
INPUT number1, number2 or (x, y)
Compute sum = number1 + number2 or x+y
Computer average = sum / 2
DISPLAY sum, average
END
```

Flowchart (3 marks)



8. (a) **Definition:** Computer Science is the study of computers, their components, software, and how to use them to solve problems efficiently. (2 marks)

(b) **Branches: (5 marks any five braches)**

i **Software Engineering** – Developing software applications.
ii **Artificial Intelligence** – Designing machines that can simulate human intelligence
iii **Computer networking**
iv Cybersecurity
v Data science
vi Quantum computing
vii Computer architecture
viii Cloud computing

(c) Qualities or characteristics of Computer (3 marks any three points)

i Speed
ii Versatility
iii Accuracy
iv Diligence
v Storage capacity
vi Multitasking

9. Studying **C programming language** is highly valuable in today's digital world for several reasons: **(10 marks mentions any five points)**

i **Foundation for Other Languages**
C is considered a "mother language" for many modern languages like C++, Java, and Python. Understanding C makes it easier to learn and master other programming languages.
ii **Efficient and Fast Performance**
Programs written in C run very quickly because it is a low-level language with minimal abstraction, making it ideal for system software and performance-critical applications.
iii **Close to Hardware**
C allows direct interaction with memory through pointers, helping programmers understand how computers work at a deeper level, including memory management and CPU processes.

iv. **Widely Used in System Programming**
Many operating systems (like Unix and parts of Windows), embedded systems, and compilers are written in C, making it essential for systems programming and hardware-related development.

v. **Portability and Flexibility**
C programs can run on different machines with little or no modification, making it a portable language widely used across platforms.

10. The Internet is a worldwide system of computer networks. It is a global network of connected computer networks and devices that communicate through standard protocols. (2 marks)

Benefits (6 marks any three points)

- ✓ Access to online education
- ✓ Improved healthcare access
- ✓ Access to information
- ✓ Access to online shopping
- ✓ Making money online
- ✓ Enhanced education
- ✓ Improved cognitive skills

Drawbacks (6 marks any three points)

- ✓ **Internet addiction and time wastage**
- ✓ **Information overload**
- ✓ **Low self esteem**
- ✓ **Spread of misinformation**
- ✓ **Security risks and privacy issues**
- ✓ **High cost**
- ✓ **Health problem**
- ✓ **Social isolation**
- ✓ **Conflicts**
- ✓ **Online harassment**
- ✓ **Cybercrime**