

**ZETECH UNIVERSITY**

**DIT112: ICT AND ETHICS**

**ASSIGNMENT ONE**

**DATE OF SUBMISSION: 9<sup>TH</sup> FEBRUARY 2025**

**QUESTION**

1. The central processing unit consists of three functional elements namely the **control unit**, **Arithmetic and logic unit** and **main memory**. Discuss each one of them (10 marks)

**1 Control Unit**

The **Control Unit** fetches, decodes, and executes instructions from memory and it also controls the flow of data between the CPU, memory, and input/output devices.

**2 Arithmetic and Logic Unit**

- The **ALU** performs all arithmetic operations and logic operations required in processing.

**3 Main Memory**

- The **main memory** temporarily stores data and instructions that the CPU needs while processing.
- The data in RAM is volatile, meaning it is lost when the computer is turned off.

2. Distinguish between random access memory (RAM) and read only memory (ROM) clearly stating the advantages and disadvantages of each (10 marks)

- **RAM** is a temporary also known as volatile memory that stores data temporarily, **while ROM** is a permanent, non-volatile memory that stores essential for the system mostly instructions.

#### Advantages of RAM

Fast data access therefore improves performance.

Allows multitasking between programs.

Smooth system operations.

#### Disadvantages of RAM

Volatile; data is lost when power is off.

It is quite expensive.

#### Advantages of ROM

Stores essential boot and firmware instructions.

Retains data permanently even without power.

Prevents accidental modifications.

#### Disadvantages of ROM

Slower than RAM in accessing data.

Cannot be easily modified.

