**REVISION QUESTIONS**

**Central Processing Unit**

1. Define the term central processing unit?

* *The CPU also known as the processor is the part of the computer that is regarded as the brain of the computer because all processing activities are carried out inside the processor.*

1. Describe three functions performed by the CPU.

* *It coordinates all processing activities in the CPU as well as input, storage and output operations.*
* *It determines which operation is to be executed next.*

1. What is a microprocessor?

* *Is the CPU of microcomputers.*

1. Explain the functions performed by
2. The control unit

* *Coordinate all processing activities in the CPU as well as input, storage and output operations. It allocates time slices to the CPU during processing by the help of the system clock.*

1. The arithmetic logic unit

* *This is where all arithmetic and logical operations are carried out.*
* *Arithmetic operations (addition, subtraction, division & multiplication)*
* *Logical operations (greater than (>), less than (<), equal to (=))*
* *Also contains temporary storage locations called registers*

1. The main memory

* *Also known as primary storage. Is a type of storage that is directly accessible by the processor. Contains the ROM and RAM memories*

1. Define the terms: *volatile memory* and *non-volatile memory.*

* *A volatile memory is the one whose contents may be lost incase of power outage (RAM) while non-volatile memory is the one which retains its contents even when power goes off (ROM)*

1. Define and explain the difference between RAM and ROM.

|  |  |
| --- | --- |
| Random Access Memory(RAM) | Read Only Memory(ROM) |
| 1. Data can be read(retrieved) and written (stored) in it 2. Is temporary (volatile) storage because its content disappears when the computer is switched off. 3. Its content is user defined i.e. the user dictates what is to be contained in the RAM | 1. One can only read its content but you cannot write on it unless its is a special type of ROM 2. It is non-volatile i.e. its content is not lost when the computer is switched off. 3. Stores permanent or semi-permanent instructions from the manufacturer called firmware |

1. How many characters (bytes) of data are held in each of the following memories?

* *4KB-4000 Bytes*
* *640KB-640,000 Bytes*
* *16MB- 16,000,000 Bytes*
* *20GB-20,000,000,000 Bytes*

1. Name three special purpose memories found either inside or outside the microprocessor, and explain what each does.
2. ***Cache memory***

* *This is the first memory which high speed retrieval of data and instructions are possible.*
* *Is the first type of RAM*

***Three types***

* *Level 1-alsoi known as primary cache located inside the microprocessor*
* *Level 2-also known as external cache that may be inside the microprocessor or mounted on the motherboard.*
* *Level 3- is the latest type of cache that works with L2 cache to optimize system performance.*

1. ***Buffers***

* *This is a temporary storage area for data waiting to be processed. It is in both input and output devices.*
* *Input is data is held in the input buffer, while output is held in output buffer.*

1. ***Registers/Virtual memory***

* *This is space on the hard disk which can be used just like the primary memory.*

***Examples***

* *Accumulator-This temporarily holds the results of the last processing step of the ALU.*
* *Instruction Register-This temporarily holds an instruction just before it is interpreted into a form that the CPU can understand.*
* *Address Register-Tis temporarily holds the next piece of data waiting to be processed.*
* *Storage Register; This temporarily holds a piece of data that is on its way to and from the CPU and the main memory*.

1. In reference to arithmetic and logic unit, explain the meaning of *logic operations* and give an example of this processing operation.

* *Logic operations are comparison operations..in this case, it’s the computers capability to compare two or more values e.g. greater than, less than equal to.*

1. What is the differences between the mainframe’s CPU and that of a microcomputer?

* *The mainframes CPU are large in size and higher processing speed compared to microcomputers which are slightly slow and less powerful*.

1. Explain the purpose of the system clock?

* *Used by the control unit to coordinate all processing activities. Sends electric signals as its means of communication. The number of pulses per second determines the speed of a microprocessor. The faster the clock pulses, the faster the CPU, hence the faster the computer can process data.*

1. What is the meaning of BIOS, and what role does it play in a computer?

* *BIOS-Basic Input Output System.*
* *Is a special firmware that accomplishes the POST process during bootup(cold booting).*

1. List three buses found in the CPU.

* *Control bus*
* *Address bus*
* *Data bus*