**MODULE:- 1**

**Understanding of Hardware and Its Components**

* **Section:- 1**

**Multiple Choice**

1. RAM
2. RAM is a short term memory of computer which stores data that CPU needs to access quickly.
3. D
4. GPU helps in graphics-related work like effects, videos, graphics.

* **Section:- 2**

**True or False**

1. True
2. True
3. True

* **Section:- 3**

**Short Answer**

|  |  |
| --- | --- |
| HDD | SSD |
| A fixed device is an electro-mechanical data storage device that stores and retrieves digital data using magnetic storage. | A storage device non-volatile memory and stores data in integrated circuits. |
|  |  |
|  |  |

1. BIOS is a special memory chip in a computer’s motherboard.It checks the computer hardware and make sure no errors exist before loading the operating system.
2. There are many input devices for computer from which commonly three are:-

* Keyboard
* Mouse
* Microphone
* Keyboard:- A keyboard is an input device that allows user to enter data and commands by pressing keys.It is wired or wireless.
* Mouse:- A mouse is a pointing device that allows users to navigate their computer screen by clicking and dragging the cursor.
* Microphone:- A microphone converts sound waves into electrical signals that can be used for recording voice, speech recognition, and other purposes.
* **Section:-4**

**Practical Application**

1. Practical done in lab.
2. Practical done in lab.

* **Section:- 5**

**Essav**

1. Proper cooling is very important for performance and stability of computer.When computer components operate, they generate heat.if this heat is not effectively dissipated, it can lead to a range of problems, including:

* Thermal throttling: To prevent overheating and potential damage, the computer may automatically reduce the performance of its components, leading to slower processing speeds and decreased efficiency.
* Hardware failures: Excessive heat can cause components like the CPU. GPU, and RAM to malfunction or fail prematurely.
* Data corruption: High temperatures can increase the risk of data corruption, leading to system instability and potential data loss.
* System crashes: Overheating can cause the entire system to crash or freeze, interrupting work and potential data loss.

**Exampes of Cooling Solutions:**

* Stock CPU coolers: These are included with most CPUs and provide basic cooling for average workloads.
* Aftermarket CPU coolers: These offer improved performance over stock coolers, often using larger heat sinks and more powerful fans.
* Liquid cooling systems: These provide superior cooling performance but can be more complex and expensive to set up.
* Case fans: Additional fans can be installed in the computer case to improve airflow and overall cooling.

1. Bus Width: The Information Highway’s Lanes

In the realm of computer architecture, a bus is essentially a pathway that connects different components within a system, allowing them to communicate and exchange data. Think of it as the electrical equivalent of a highway, facilitating the flow of information between the CPU, memory, and peripherals.

Now, the bus width is analogous to the number of lanes on this highway.It represents the number of parallel data lines within the bus.Each line can carry a single bit of data, similar to a single car on a lane.

Significance of Bus Width:

* Data Transfer Rate: A wider bus, with more data lines, can transmit more data simultaneously.This is akin to having a multi-lane highway, allowing for faster and more efficient traffic flow.A widerbus, therefore, translates to faster data transfer rates between components.
* System Performance: Faster data transfer directly impacts system performance.A wider bus can significantly improve the speed of tasks that involve heavy data movement, such as loading large files, running complex applications, or handling multimedia content.
* System Capacity: The bus width also influences the amount of data that can be addressed or accessed at once.A wider bus can handle large data chunks, enabling the system to process more information concurrently.