**MICROPROCESSOR (LECTURE)**

Activity No. 1

**Review of Terminologies**

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Score

*Submitted by:*

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**<Saturday – 4:00 pm – 7:00 pm> / <Section | Block 2>**

*Date Submitted*

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*Submitted to:*

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Instruction:

1. Define and discuss the following terminologies related to microprocessor systems:
2. **MPU**

A Microprocessor Unit, or just simply ‘microprocessor’, is essentially a small (micro) and integrated circuit that operates as a CPU (Central Processing Unit) . MPUs contain all the essential components of a CPU, such as Arithmetic Logic Units (ALUs), control units, registers, and memory (Brown & Malvino, 1999). MPUs are typically developed for general-purpose computer tasks and processes, often utilized in literal computers: desktops, laptops, etc.

1. **MCU**

Microcontroller Units or simply ‘microcontroller’ function similarly to MPUs, operating as a CPU and also containing the essential components of a CPU such as ALUs. MCUs, however, are designed and developed for specific purposes rather than general purposes. (Keim, 2019) Microprocessors are mostly utilized in embedded systems to control the hardware; IoT devices and most smart devices and appliances are powered by MCUs for their specific purposes.

1. **Features of microprocessor and microcontroller**

Features of MPUs:

* Designed for general-purpose computing applications.
* CPU + support chips.
* Instruction set is more flexible.
* Higher processing power compared to MCUs.
* MPU architecture: CPU with minimal on-board memory, peripherals, and I/O interfaces.
* Higher clock speed, typically greater than 1 GHz.

Features of MCUs:

* Designed for specific embedded system applications.
* Single-chip system.
* Fixed instruction set.
* Lower processing power.
* MCU architecture: Single-chip computer system with on-board memory, peripherals, and I/O interfaces.
* Lower clock speed, typically less than 100 MHz

(GeeksforGeeks, 2023)

1. **Applications of microprocessor and microcontroller**

Applications of MPUs are mainly in computers and electronics: desktops, laptops, and smartphones. In transportation, microprocessors are also utilized, in modern or smart vehicles. (java point, n.d.)

Microcontrollers are found in and much more utilized in electronics; Toys, Robots, and IoT devices, such as smart home appliances use microcontrollers (Sidhartha, 2015). Along with MPUs, microcontrollers are also utilized in modern vehicles, airbag systems and engine control units (ECUs) use microcontrollers for their specific functions.

1. Cite your References below.

# References

Brown, J. A., & Malvino, A. P. (1999). Introduction to Microprocessors. In *Digital Computer Electronics - Third Edition* (p. 219). New York: Glencoe/McGraw Hill.

GeeksforGeeks. (2023, May 2). *What’s difference between Microcontroller (µC) and Microprocessor (µP)?* Retrieved from GeeksforGeeks: https://www.geeksforgeeks.org/whats-difference-between-microcontoller-%C2%B5c-and-microprocessor-%C2%B5p/

java point. (n.d.). *Microprocessor Applications.* Retrieved from java point: https://www.javatpoint.com/microprocessor-applications

Keim, R. (2019, March 25). *What Is a Microcontroller? The Defining Characteristics and Architecture of a Common Component.* Retrieved from All About Circuits: https://www.allaboutcircuits.com/technical-articles/what-is-a-microcontroller-introduction-component-characteristics-component/

Sidhartha. (2015, October 26). *Different Applications of Microcontroller.* Retrieved from VLSIFacts: https://www.vlsifacts.com/different-applications-microcontroller/