Bangladesh University

Assignment Information:

Subject: Microprocessor & Assembly Language
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Submitted To:

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Question 1: Difference between Microprocessor and Microcontroller?

Microprocessor	Microcontroller
Microprocessor is the heart of Computer system.	Micro Controller is the heart of an embedded system.
It is only a processor, so memory and I/O components need to be connected externally	Micro Controller has a processor along with internal memory and I/O components.
Memory and I/O has to be connected externally, so the circuit becomes large.	Memory and I/O are already present, and the internal circuit is small.
You can't use it in compact systems	You can use it in compact systems.
Cost of the entire system is high	Cost of the entire system is low

Question 2: What is Microcontroller? What is Microprocessor?

Microcontroller: A microcontroller is a chip optimized to control electronic devices. It is stored in a single integrated circuit which is dedicated to performing a particular task and execute one specific application.
It is specially designed circuits for embedded applications and is widely used in automatically controlled electronic devices. It contains memory, processor, and programmable I/O.

Microprocessor: A microprocessor is a controlling unit of a micro-computer wrapped inside a small chip. It performs Arithmetic Logical Unit (ALU) operations and communicates with the other devices connected with it. It is a single Integrated Circuit in which several functions are combined.

Question 3: Name the types of Microprocessor? Name the types of Microcontroller?

Types of Microprocessor:

Important types of Microprocessors are**:**

1. Complex Instruction Set Microprocessors
2. The Application Specific Integrated Circuit
3. Reduced Instruction Set Microprocessors
4. Digital Signal Multiprocessors (DSPs)

Types of Microcontroller:

Important types of Microcontroller are:

1. 8 bit Microcontroller
2. 16 bit Microcontroller
3. 32 bit Microcontroller
4. Embedded Microcontroller
5. External memory Microcontroller

Question 4: Define history and feature of Microprocessor?

History of Microprocessor:

Here, are the important landmark from the history of Microprocessor

1. Fairchild Semiconductors invented the first IC (Integrated Circuit) in 1959.
2. In 1968, Robert Noyce, Gordan Moore, Andrew Grove found their own company Intel.
3. Intel grew from 3 man start-up in 1968 to industrial giant by 1981.
4. In 1971, INTEL created the first generation Microprocessor 4004 that would run at a clock speed of 108 kHz
5. From 1973 to 1978, second-generation 8-bit microprocessors were fabricated like Motorola 6800 and 6801, INTEL-8085, and Zilog's-Z80.
6. In 1978, Intel 8008 third-generation process came into the market.
7. In the early 80s, Intel released fourth-generation 32-bit processors.
8. In 1995, intel released in fifth-generation 64-bit processors

Features of Microprocessor:

Here are some important features of Microprocessor:

1. Offers built-in monitor/debugger program with interrupt capability
2. Large amount of instructions each carrying out a different variation of the same operation
3. Offers Parallel I/O
4. Instruction cycle timer
5. External memory interface

Question 5: Define history and feature of Microcontroller?

History of Microcontroller:

Here, are important landmarks from the history of Microcontroller:

1. First used in 1975 (Intel 8048)
2. The introduction of EEPROM in 1993
3. The same year, Atmel introduced the first microcontroller using Flash memory.

Features of Microcontroller:

Here are some important features of Microcontroller:

1. Processor reset
2. Program and Variable Memory (RAM) I/O pins
3. Device clocking central processor
4. Instruction cycle timers