INSTITUTE OF INFORMATION TECHNOLOGY

JAHANGIRNAGAR UNIVERSITY

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Submitted To

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Answer to the question no-1

8086 Microprocessor is an enhanced version of 8085 Microprocessor that was designed by Intel in 1976. It is a 16-bit Microprocessor having 20 address lines and 16 data lines that Provides up to 1MB Storage. It consists of Powerful instruction set which Provides operations like multiplication and division easily.

Features of 8086

The most Prominent features of a 8086 microprocessor are as follows

1. It has an instruction queue which is capable of storing six instruction bytes from the memory resulting in faster Processing.

2. It was the first 16-bit Processor having 16-bit ALU 16-bit registers internal data bus and 16-bit external data bus resulting in faster Processing.

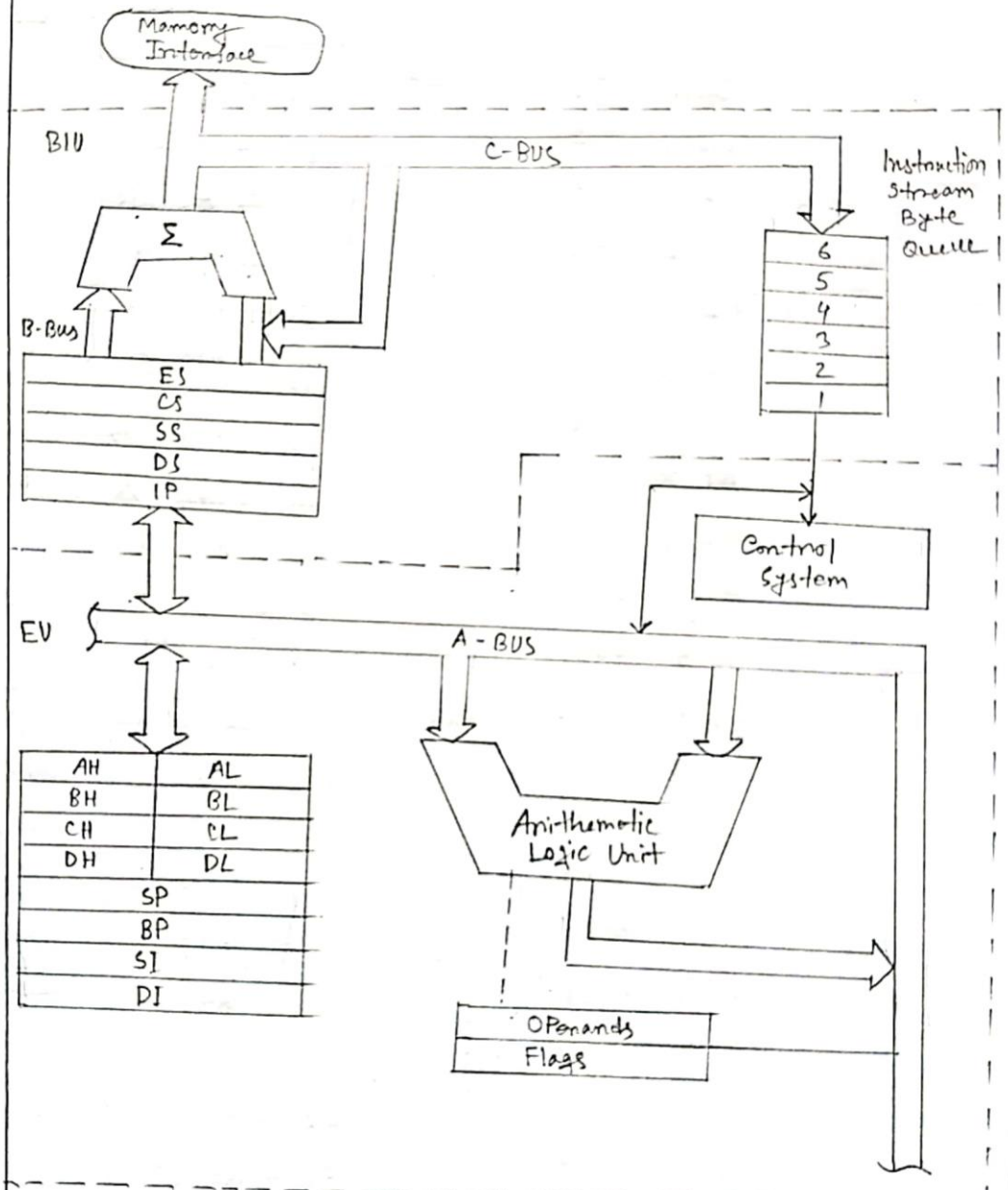
3. It is availiable in 3 versions based on the frequency of operation.

4. It uses two Stages of Pipelining
5. Fetch Stage can Prefetch up to 6 bytes of instructions and stores them in the queue.
6. Execute Stage executes these instructions
7. It has 256 Vectored interrupts
8. It consists of 29,0000 transistors.

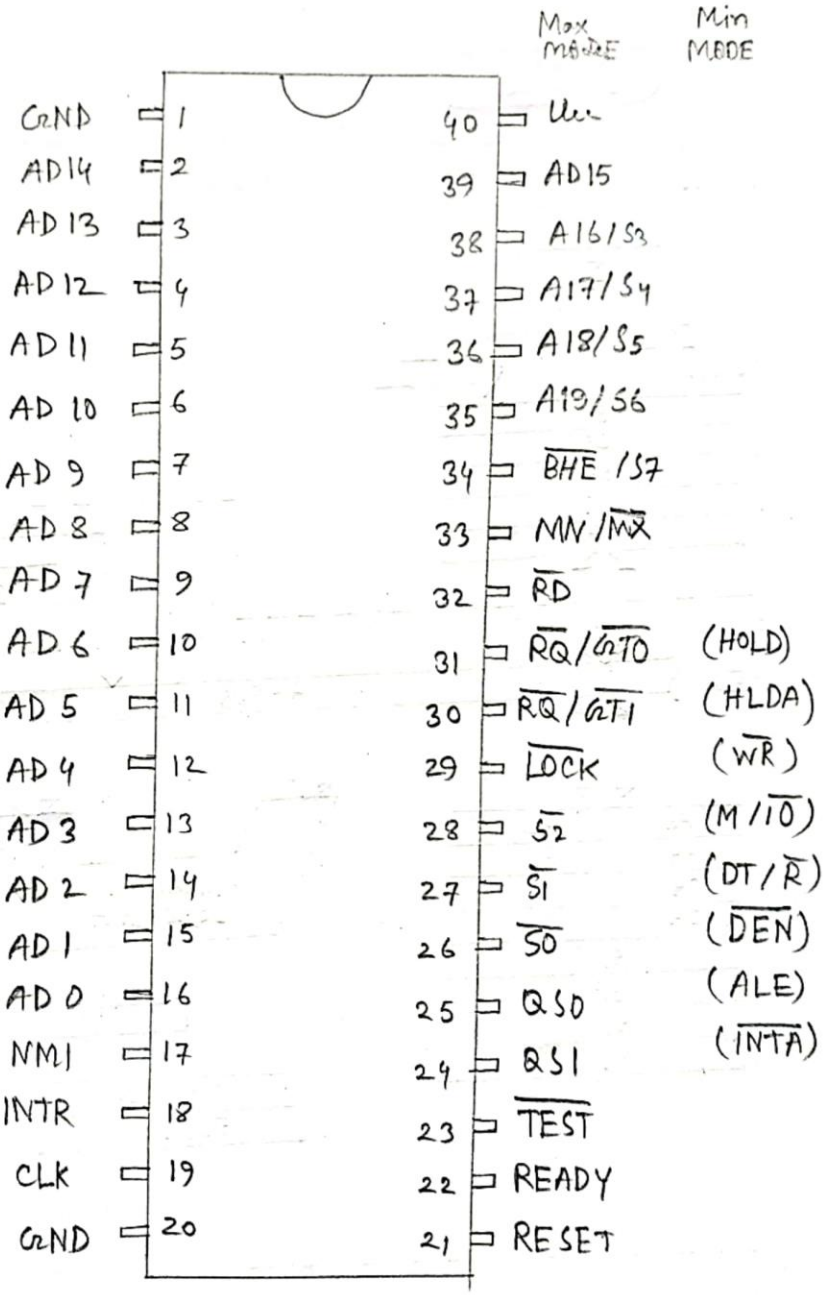
Difference between 8085 and 8086 Microprocessor

8085 Microprocessor	8086 Microprocessor
It is an 8-bit microprocessor	It is 16-bit Microprocessor
It has a 16-bit address line	It has a 20-bit address line
It has a 8 bit data bus	It has a 16-bit data bus
The memory capacity is 64KB	The memory capacity is 1MB
It has five flags	It has nine flags
It is accumulator based Processor.	It is general Purpose register based Processor.
It does not support Pipelining	It supports Pipelining
In 8085 only one Processor is used.	In 8086 more than one Processor is used.
The cost of 8085 is low	The cost of 8086 is high.

Architecture of 8086



8086 Pins Configuration



Answer to the question no-2

The size of segment registers is an 8086 is sixteen bits.

The segment number is shifted left by four bits before being added to the base address. This gives us the 20 bits.

Memory size = 2^{20} bytes
= 1 MB

So Physical memory size is 1MB for the 8086 microprocessor.

THE END