

1.a) Explain the role of the **Bus Interface Unit (BIU)** and **Execution Unit (EU)** in the internal architecture of the 8086 microprocessor.

b) The value of Code Segment (CS) Register is 4042H and the value of different offsets is as follows: IP: 0580H, DI: 4247H

Calculate the effective address of the memory location pointed by the CS register.

c) What is the function of the **Instruction Queue** in the 8086?

2. What is Super Scaler Technology? Why Pentium is called superscaler?

Differentiate between 80486 and Pentium 4.



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1.a) During program execution, the **Execution Unit (EU)** is processing a **MUL** instruction, while the **Bus Interface Unit (BIU)** continues fetching new instructions from memory.

Explain how both units work **simultaneously** in this situation. What would happen if the **instruction queue becomes empty** before the EU finishes its operation? How does this affect the overall performance of the 8086?

b) The data segment (DS) is **0FFFH**, and the offset is **0020H**.

1. Calculate the physical address.
2. Does it exceed 1MB of addressable memory? Why or why not?
3. Explain how the BIU prevents addressing beyond 20-bit physical limits.

c) What is CISC and RISC? Explain the features of 8088 and Pentium microprocessor

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চ্যাপ্টার:১(Intel Microprocessor Evolution history)

চ্যাপ্টার:২(Internal Architecture of 8086 Microprocessor)

Sec: A & J

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