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ID: Course Code:

1. Your program is running on an 8085 microprocessor. A large loop uses several repetitive instructions. You notice that performance drops slightly when new data is fetched frequently. How does the Bus Interface Unit (BIU) help in improving execution speed in such a situation?

2.You're tasked with writing a low-level program in assembly language to process sensor data for an embedded system using the 8086 microprocessor. The program performs the following:

- It receives 16-bit temperature values from a sensor and stores them temporarily.
- It multiplies the value by a calibration factor.
- It stores and displays results using output ports.

To implement this, you decide to use general-purpose registers effectively.

3.Consider the following 8086 register values at a certain point during program execution:

AX = 1212h, BX = 1B1Bh, CX = 2323h, DX = 2C2Ch
SI = 0050h, DI = 0110h, SP = 0023h, BP = 0100h
DS = 1010h, SS = 2000h, ES = 1020h

(i) MOV AX, [2000h]
(ii) MOV AX, 20h[BP]
(iii) MOV AX, 40h[BX][DI]
(iv) MOV AX, [BX]
(v) MOV AX, [BX][SI]
(vi) MOV AX, [DI]
(vii) PUSH AX
(vii) POP CX
Now make a table-

Instruction	Addressing Mode	Segment Used	Physical Adress Calculation	Notes (valid/invalid)
MOV AX, [2000h]				