East West University
Department of EEE

EEE 302: Microprocessors & Interfacing
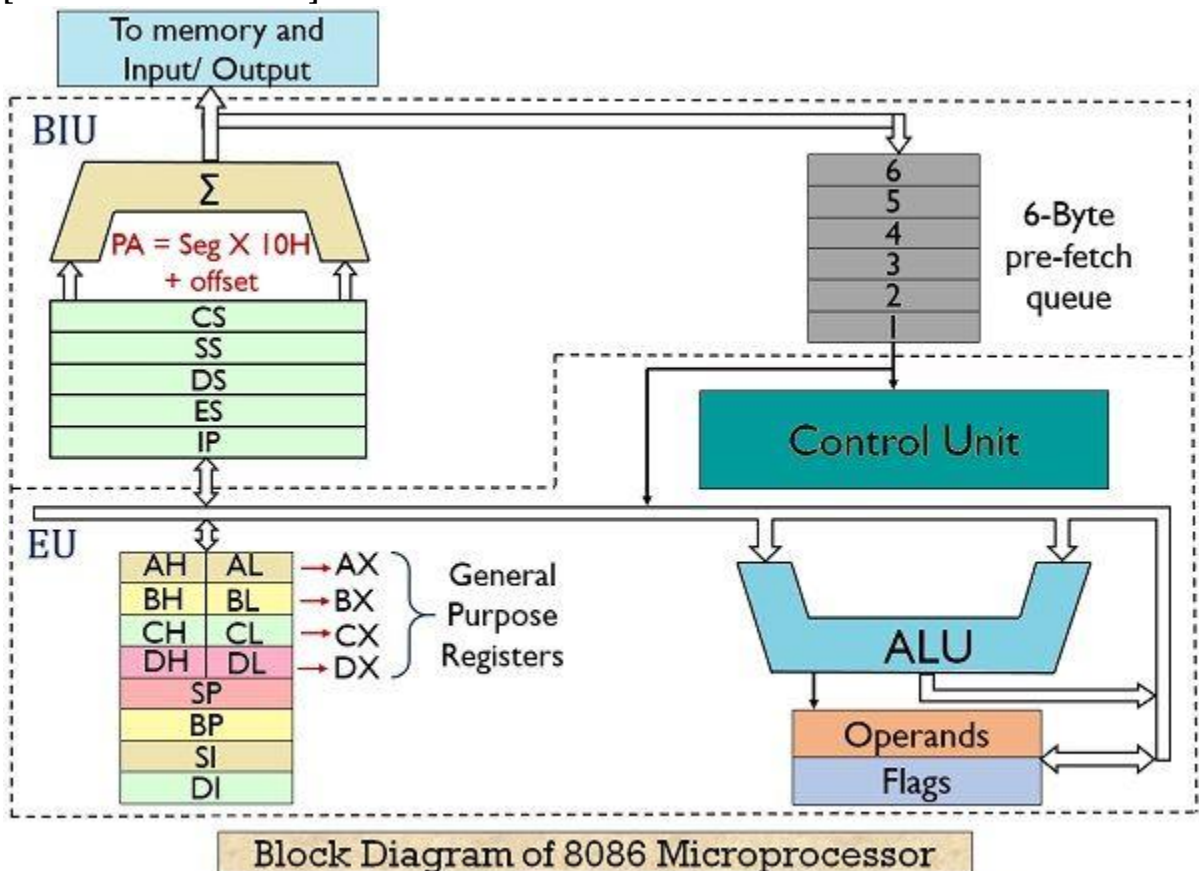**Semester: Spring 2022**
Course Instructor: FMA
Section-1   Midterm-1
Date: March 10, 2022

Time: 80 minutes   **Total Marks: 80**

Answer all the questions. Do not use notes, books, and mobiles

1. In the following diagram, you have the architecture of the Intel 8086 microprocessor. Briefly answer the following questions: **[CO1/UNDERSTAND]**

Block Diagram of 8086 Microprocessor

Electronics Desk

a) Why is the architecture of 8086 divided into two parts? How can the two units enhance the total system performance?

b) How many registers are there inside Intel 8086? What is the purpose of segment registers and general-purpose registers? Mention the names also.

c) Assume you have 3 consecutive commands prefetched by the BIU unit
- MOV AL, [BX]
- MOV CL, [0190h]
- MOV DH, 0Ah

How these commands will be pipelined by the BIU unit of the Intel 8086 Microprocessor?

d) What is the function of the control unit? Compare operand and opcode. Which one is responsible to overtake the control unit after pipelining process?

[4x10 =40 marks]

2. In the following diagram, you have the architecture of the Intel 8086 microprocessor's memory interfacing. Briefly answer the following questions: **[CO1/UNDERSTAND]**
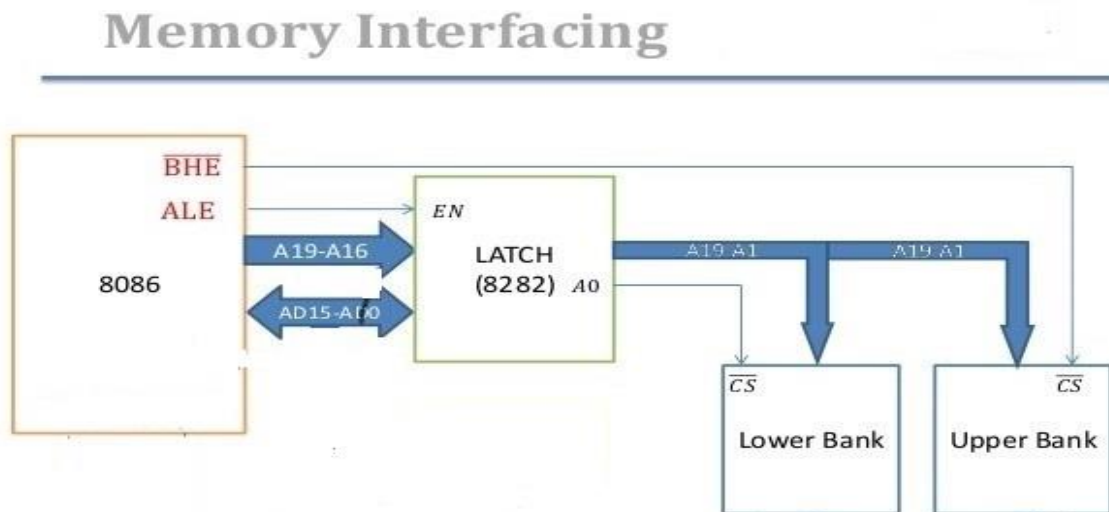
a. Why only the A_0 pin is connected to the lower bank of memory?
b. How the addresses of each memory location are equally distributed?
c. What was the reason for not imposing to engage the Intel 8086 microprocessor to capture the 16-bit data at a time since it has a 16-bit data bus also?
d. How do the A_0 pin and BHE pin combination work together?

[4x10 =40 marks]