1. Draw and discuss the architecture of 8086. Mention the jobs performed by BIU and EU.
2. How is the 20 bit address saved in 8086 microprocessor and what is the technology used in 8086?
3. Consider contents of registers DS=18FFH, BX=0204H, SI=0015H. Two 8 bit numbers are stored in the data segment memory. The first number is located at a displacement of contents of BX, and the second number is displaced by the contents of the SI register from the first number.

   A) What is the effective (offset) address for the two numbers in memory respectively?

   B) Generate the Physical Addresses for the two numbers

   C) Write an Assembly language program that adds the two numbers and stores the result at a displacement of 50H from the location of the second number.

   D) Discuss the addressing modes applied in your program

4. Write a program that clears bits 1 &2 and sets bits 7, 8 & 10 of register DX

5. When are the status signals **S3-S6** output to the bus?

6. Do 8086 and 8088 have the same instruction set? explain their difference
7. Explain the applications of latches and buffers in 886/8088 buses

8. Write a program that converts an ASCII code to EBCDIC code. Assume DS=4600H, ASCII code for letter B=42H, and offset address for the look up table which is in the data segment memory is 0256H.

9. Write an ALP to evaluate X (Y + Z), where X = 10 H, Y = 20 H and Z = 30 H

10. What is the purpose of multiplexing address/data bus and address/status signals?

11. Draw the demultiplexed and buffered bus structure for the 8088 microprocessor and compare it with the 8086 microprocessor.

12. Consider an 8088 memory system containing four ROM chips of 128KB each and eight RAM chips of 64KB each. [Assume the Address range for the ROM chips 0000H-7FFFFH, and 8FFFFH-FFFFFH for the RAM chips]

   A) Design a circuit that interfaces the 8088 microprocessor with the memory systems using appropriate chip select circuits and including control signals

   B) Decode the 20 bit address for the locations in the individual chips