

(3 Hours)

[Total Marks: 80]

- N.B : (1) Question No. 1 is compulsory.  
(2) Attempt any three questions from remaining questions.  
(3) All questions carry equal marks.

- 1.a. Explain the conditions under which the pipeline stalls in the 8086. (05)
- b. Explain the flag register of the 8086. (05)
- c. Explain the advantages of a Superscalar architecture with reference to the Pentium processor. (05)
- d. Explain the ICW1 and ICW4 command words of the 8259 PIC. (05)
2. a. Write a detailed note on Interrupt handling in the 8086. (10)
- b. Explain the working of a 8086 -8087 system with a neat diagram. (10)
3. a. Explain the generation of the Clock, Ready and reset signals for the 8086 using the 8284 clock generator. (10)
- b. Draw and explain the interface of the 8086 to drive a seven segment LED. (10)  
Write a program to display 0 to 9 continuously.
4. a. Draw and explain the timing diagrams for Read and write operations of the 8086 in Minimum mode. (10)
- b. What is Mixed mode programming? Give an example of a mixed mode program using C and assembly language for the 8086. (10)
5. a. Interface 32 KB of ROM (using 16 KB devices) and 32 KB of RAM (using 16KB devices) to the 8086. Draw the memory map and show the address decoding. (10)
- b. Explain the Branch Prediction logic of the Pentium. (10)
6. Write short notes on: (Any two) (20)
  - a. DOS interrupts
  - b. Instruction and Data Caches of the Pentium
  - c. Assembler Directives