

**Duration: 3hrs**

**[Max Marks:80]**

- N.B. : (1) Question No 1 is Compulsory.  
(2) Attempt any three questions out of the remaining five.  
(3) All questions carry equal marks.  
(4) Assume suitable data, if required and state it clearly.

- 1 Attempt **any FOUR** [20]
- a Explain the Floating point Pipeline of Pentium Processor.
  - b What is the advantage of Memory Banking in 8086 Processor? Justify with example.
  - c Write an assembly language program for searching a Character in a Given String. (Consider your own String)
  - d Explain the following instructions: XLAT, DAA, LAHF, AAA related to 8086.
  - e Differentiate between real Mode, Virtual Mode and Protected Mode of 80386 Processor.
- 2 a Draw and explain write operation Timing diagram of 8086 Processor in Maximum mode. [10]
- b Draw and Explain the Master Slave Mode of 8259 Processor with Suitable example. Consider Slave 8259 connected to IR0 and IR4 of master. [10]
- 3 a Design 8086 microprocessor-based on following Specifications: [10]
- 1. MP 8086 working at 10MHz minimum mode.
  - 2. 64 KB ROM using 16KB Devices
  - 3. 32KB RAM using 16KB chips
- b Explain Mode 2 of 8255 with a neat block diagram. Show the CWR initialization. [10]
- 4 a Explain the 8257 DMA controller with the help of neat diagram and explain its Control Register Format. [10]
- b Write an ALP for 8086 to arrange 10 numbers in ascending order.. [10]
- 5 a Explain the segment descriptor of 80386 processor. [10]
- b Explain the EFLAG REGISTER of 80386 Processor. [10]
- 6 a Explain the interrupt structure of 8086 processor. [10]
- b Explain the Branch Prediction Mechanism of Pentium Processor. [10]

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