(3 Hours) [80 Marks]

N.B. 1) Question No. 1 is compulsory.
2) Attempt any **Three** questions out of remaining.
3) Assume suitable data wherever necessary and state them clearly.

Q.1 a) Draw and explain memory read machine cycle timing diagram in minimum mode of 8086. 5
   b) Write a short note on mixed language programming. 5
   c) Explain flag register of 80386 microprocessor. 5
   d) Give formats of initialization command words(ICW's) of 8259 PIC. 5

Q. 2 a) Explain the maximum mode configuration of 8086 microprocessor. 10
   b) Design 8086 based system for following specifications:
   i) 8086 in minimum mode with clock frequency 5MHz.
   ii) 64 KB EPROM using 16KB*8 chips
   iii)16 KB RAM using 8KB*8 chips 10

Q. 3 a) Explain the branch prediction logic used in Pentium processor . 10
   b) Draw and explain the block diagram of 8257 DMA controller. 10

Q.4 a) Explain the modes of operation of 80386 microprocessor . 10

   b) i) Explain the I/O mode control word format of 8255 PPI . 5
   ii) Explain an instruction issue algorithm of Pentium processor. 5

Q.5 a) Differentiate procedure and macro. Write a program to find the factorial of a number using procedure. 10
   b) Explain the interrupt structure of 8086 microprocessor 10

Q.6 a) Explain segmentation of 8086 microprocessor. Give its advantages. 10
   b) Explain different addressing modes of 8086 microprocessor. 10

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