(Time: 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)**	Explain memory banking in 8086	**5**
	b)	Explain VM, RF, IOPL, NT and TF flags of 80386 microprocessor	**5**
	c)	Write addressing modes of the following instructions i) MOV AX, [BX+SI] ii) AND CL,[2000] iii) IN AL, DX iv) JMP [BX+2] v) ADD AX,[BX+SI+5]	**5**
	d)	Explain BSR mode of 8255 PPI	**5**
Q.2	**A)**	Design 8086 based system for the following requirements i) 8086 working in minimum mode with 8MHz. ii) 64 KB EROM using 32 KB * 8 devices iii) 128 KB RAM using 64 KB * 8 devices	**10**
	B)	Draw the block diagram of PIC8259 and discuss its operation	**10**
Q.3	**A)**	Draw and explain the block diagram of PIT 8253	**10**
	B)	Draw and explain demultiplexing of address bus in 8086	**10**
Q.4	**A)**	Explain how flushing of pipeline problem is minimized in Pentium architecture	**10**
	B)	Draw and explain maximum mode configuration of 8086 system	**10**
Q.5	**A)**	Write a 8086 assembly language program with appropriate comments, to find if the given year is a leap year or not	**10**
	B)	Explain Strobed Bi-directional I/O Mode 2 operation of 8255 PPI with control word and timing diagram	**10**
Q.6	**A)**	Differentiate real mode, protected mode and virtual mode of 80386 microprocessor	**5**
	B)	Write a short note on mixed language programming	**5**
	C)	Explain the following instructions in 8086 : LAHF and XLAT	**5**
	D)	Explain data transfer modes of DMAC 8257	**5**

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