

(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 5
 i) MOV AX, [BX+SI]
 ii) AND CL, [2000]
 iii) IN AL, DX
 iv) JMP [BX+2]
 v) ADD AX, [BX+SI+5]
 d) Explain BSR mode of 8255 PPI 5
- Q.2** A) Design 8086 based system for the following requirements 10
 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
 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
