



Microprocessor

JUNE 19

Computer Engineering (Semester 5)

Total marks: 80

Total time: 3 Hours

INSTRUCTIONS

(1) Question 1 is compulsory.

(2) Attempt any **three** from the remaining questions.

(3) Draw neat diagrams wherever necessary.

- 1.a.** Give the advantages of memory segmentation of 8086 microprocessor. (5 marks)
- 1.b.** Differentiate Procedure and macro with example. (5 marks)
- 1.c.** Explain VM, RF, IOPL and NT flags of 80386 microprocessor. (5 marks)
- 1.d.** Explain an instruction issue algorithm of Pentium processor. (5 marks)
-
- 2.a.** Explain minimum mode configuration of 8086 microprocessor. (10 marks)
- 2.b.** Explain cache organization of Pentium processor. (10 marks)
-
- 3.a. i)** Write a short note on mixed language programming. (5 marks)
- 3.a. ii)** Write a program to find the largest number from an array. (5 marks)
- 3.b.** Draw and explain the block diagram of 8255 Programmable Peripheral Interface (PPI) with control word formats. (10 marks)



- 4.a.** Differentiate Real Mode, Protected Mode and virtual 8086 mode of 80386 microprocessors. (10 marks)
- 4.b.** Design 8086 based system for following specifications: (10 marks)
- i) 8086 in minimum mode with clock frequency 5MHz.
 - ii) 128 KB EPROM using 32KB*8 chips
 - iii) 32 KB RAM using 16KB*8 chips
- 5.a.** Explain different addressing modes of 8086 microprocessor. (10 marks)
- 5.b.** Explain the operation of three 8259 PIC in cascaded mode. (10 marks)
- 6.a.** Draw and explain memory read and memory write machine cycle timing diagrams in maximum mode of 8086. (10 marks)
- 6.b.** Explain the following:
- i) Types of interrupts (5 marks)
 - ii) Modes of 8253 Programmable Interval timer (5 marks)