

(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 0210

Roll No.

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B. Tech.

(SEM. IV) THEORY EXAMINATION 2011–12

MICROPROCESSORS

Time : 3 Hours

Total Marks : 100

Note :- (i) Attempt **all** questions.

(ii) All questions carry equal marks.

1. Answer any **four** parts of the following :- **(4×5=20)**
- (a) Explain the basic blocks of microprocessor based system.
 - (b) What are the low and high level languages and explain the difference between interpreter and a compiler.
 - (c) What are the advantages/disadvantages of memory mapped I/O over I/O mapped I/O ?
 - (d) With relevant diagram, explain the role of timing and control unit in the operation of microprocessors.
 - (e) Illustrate the memory address range of the chip with 1K bytes of the memory and explain how the range can be changed by modifying the hardware of the chip select CS line.
 - (f) How to generate control signal from memory and I/O in 8085 microprocessor and explain why address and data buses are multiplexed in the 8085 microprocessor ?

2. Answer any **two** parts of the following : $(2 \times 10 = 20)$
- (a) Explain the classification of the instruction set of 8085 microprocessor with suitable examples.
 - (b) Give the format of flag register in 8085 microprocessor and write a program to subtract two 8-bit numbers and also draw the flow chart of them.
 - (c) Explain the different addressing modes of 8085 microprocessor with examples.
3. Answer any **two** parts of the following : $(2 \times 10 = 20)$
- (a) Explain the segment register and give the rules for memory segmentation.
 - (b) Explain the addressing modes of 8086 microprocessor with the help of examples and differentiate conditional flag and control flag.
 - (c) Explain the types and response of hardware and software interrupt in 8086 microprocessor.
4. Answer any **two** parts of the following : $(2 \times 10 = 20)$
- (a) Explain Assembler Level programming (ASMs) and draw the flow chart of Assembler Level programming.
 - (b) Explain the usefulness of following instructions in 8086 microprocessor :
 - (i) LOCK (ii) XLAT (iii) TEST &describe the difference between a jump and a call instruction.
 - (c) Explain the difference between Recursive and Re-entrant Procedure.

5. Answer any **two** parts of the following : **(2×10=20)**
- (a) Draw the internal block diagram of 8255 and explain the bit set/reset mode of 8255 PPI.
 - (b) Draw and explain the functional block diagram of 8253 and give control word format.
 - (c) Write short notes on the following :
 - (i) 8237 DMA controller
 - (ii) 8259 Programmable Interrupt Controller.