

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

**PAPER ID : 3040**Roll No. 

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**B.Tech.**

SIXTH SEMESTER EXAMINATION, 2005-2006

**MICROPROCESSORS**

Time : 3 Hours

Total Marks : 100

- Note :**
- (i) Attempt **ALL** questions.
  - (ii) All questions carry equal marks.
  - (iii) In case of numerical problems assume data wherever not provided.
  - (iv) Be precise in your answer.

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1. Attempt **any four** parts of the following : (5×4=20)
- (a) What are basic function of microprocessor ? Differentiate between microprocessor and microcomputer.
  - (b) Describe, how 8086 microprocessor fetches and executes an instruction with diagram.
  - (c) Describe memory segmentation. How can it generate the physical address ? Explain with an example.
  - (d) Explain pipelining and parallel processing.
  - (e) Show bit wise flag register of 8086 and explain the function of each flag with an example.
  - (f) Describe the BUS cycle of 8086. What is the utility wait states into a BUS cycle ?

2. Attempt *any four* parts of the following : (5x4=20)
- (a) What are the various types of addressing modes supported by 8086 microprocessors ?
  - (b) Explain the instruction template. Describe instruction MOV CS: [BX], DL in instruction template.
  - (c) Write an 8086 assembly language program to convert binary to BCD.
  - (d) (i) Write an 8086 assembly language program for the multiplication of two 16 bit number in memory location and the result is 32 bit and is to be stored in memory location.  
(ii) Write an 8086 assembly language program for loop without condition jump instruction.
  - (e) Write an 8086 assembly language program to calculate factorial number (N=8) using recursive procedure.
  - (f) How assembler MACRO differ from procedure ? What are the advantages of MACRO over procedure ?
3. Attempt *any two* parts of the following : (10x2=20)
- (a) Draw and explain the pin diagram of 8086.
  - (b) Draw the diagram of 8284 A clock generator. Explain how the clock is generated.
  - (c) Draw the timing diagram for READ and WRITE cycles in minimum mode of 8086 microprocessor.
4. Attempt *any two* parts of the following : (10x2=20)
- (a) Explain with neat diagram internal architecture of 8255. Describe its BSR modes.
  - (b) What is DMA ? Explain with neat diagram the internal architecture of 8237 DMA controller.
  - (c) Describe the interfacing of an 8259A PIC to 8086 microprocessor.

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5. Attempt *any two* parts of the following : (10x2=20)
- (a) Design an interfacing circuitry of 64 K bit DRAM to 8086 microprocessor.
  - (b) Write short notes on advanced microprocessor or microcontroller.
  - (c) Describe SRAM and DRAM. Also enlist the advantages of DRAM over SRAM.

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