

**III B.Tech II Semester Supplementary Examinations,  
November/December 2005  
MICROPROCESSORS AND MICROCONTROLLERS  
( Common to Electrical & Electronic Engineering, Electronics &  
Communication Engineering, Electronics & Instrumentation Engineering,  
Bio-Medical Engineering, Electronics & Control Engineering and Electronics  
& Telematics)**

**Time: 3 hours****Max Marks: 80**

**Answer any FIVE Questions  
All Questions carry equal marks**

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1. (a) Explain different parameter passing techniques in procedure and subroutine CALLs of 8086. [6]  
(b) Write a program to generate different delays 15sec, 20sec and 30sec by calling the procedure for 1sec. Delay ( Assume the microprocessor uses 5 MHz clock.) [10]
2. (a) Draw the memory map of the 80386. when operated in the  
i. Protected mode [5]  
ii. Real mode. [5]  
(b) What is selector? How does it choose the local descriptor table? [2+4]
3. Explain the architectural features of MC 68000. [16]
4. (a) What are Register windows and how are they implemented in RISC machines? [8]  
(b) Distinguish between pipelining and super-pipelining? [8]
5. (a) How floating-point exceptions are handled in Pentium microprocessor? [8]  
(b) Explain the enhanced instructions set of Pentium microprocessor? [8]
6. (a) Explain the interior structure of Pentium Pro microprocessor with neat schematic diagram? [12]  
(b) Explain the pipeline feature of Pentium Pro microprocessor? [4]
7. (a) Determine whether the 8051 can be made to execute a single program instruction using external circuitry only without the help of software? [8]  
(b) Outline a scheme for single stepping the 8051 using a combination of hardware and software? [8]
8. (a) Write a program of 8051 to copy the value 55 H into RAM memory location 40H to 45H using. [9]  
i. Direct addressing mode

- ii. Register indirect addressing mode without a loop
  - iii. With a loop
- (b) Assume that ROM space of 8051 starting at 250H contains “Hello”, write a program to transfer the bytes into RAM locations starting at 40H. [7]

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