USN

PES Institute of Technology, Bangalore

(Autonomous Institute under VTU, Belgaum)

CS 254

SEMESTER END EXAMINATION (SEE) B. E. 4th SEMESTER – Summer Term 2010

MICROPROCESSOR AND MICROCONTROLLER(CS/IS)

3 Hrs — Answer All Questions — Max Marks: 100

1.	Describe the following components of 8086 i) Instruction Queue ii) Flag register	6
	Explain each of the following with an example stating whether it is a processor instruction or an assembler directive. (i) STOSW (ii) PROC (iii) IN (iv) ORG	8
	For the following instructions, indicate the addressing mode type, the offset address and the physical address of the source operand, if CS= 2F00H, DS= 5400H, SS= 9A00H, ES = 6200H SI= 3200H, BX= E900H, BP= D000H, DI = 2ABCH i) MOV BL, ES:[2000H] ii) MOV AX, [BX+SI] iii) MOV BX, [BP+SI-100H]	6
b.	A sequence of instructions is given below. Write the output after the execution of every instruction mentioning where it is stored. Assume AX=1294H and BX=7B68H initially SUB AL, BL DAS MUL BL AAM	4
c.	Write a 8086 ALP to convert a 2-digit BCD number to its binary equivalent. Include comments.	7
d.	Differentiate between a procedure and an Interrupt Service Subroutine of 8086.	4
	Draw the timing diagram for normal memory write operation for 8086 in minimum mode with all the relevant signals.	5
a.	Draw the Port 1 Pin internal structure of 8051 and explain.	6
b.	Explain the program status word register in 8051. Explain the internal RAM organization of 8051 microcontroller.	6
c.	Assume that in a security system, a sensor is connected to pin INT1 and that if the sensor output goes low, a relay connected to P2.0 needs to be turned ON for 100ms by making P2.0 high. Assuming a 11.0592MHz clock, write a program to perform the above operation.	8