Name:	
Enrolment No:	**UPES**

Program Name: B. Tech Electrical Engineering   **Semester: V**
Course Name: Microprocessor and Microcontroller   **Submission Date**
Course Code: ECEG 3030   **Max. Marks: 100**
Nos. of page(s): 2

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SECTION A
(4X5 = 20 M)

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Q. No.		Marks	CO
Q 1	What do you understand by Microprocessor and Microcontroller?	4	CO1
Q 2	Illustrate the followings of 8085 processor : a) Hardware and software interrupts b) Maskable and non-Maskable interrupts	4	CO2
Q 3	What is the purpose and use of flag registers in 8085 microprocessor and 8051 microcontrollers? Explain with an example?	4	CO1
Q4	Write 8085 assembly language program to subtract two 8-bit numbers D9H and 9EH using only two instructions. Mention the result and status of flags.	4	CO1
Q5	Evaluate the content of A at the end of this program for 8085 Microprocessor? MVI A, 06H RLC MOV B, A RLC RLC ADD B HLT	4	C01

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SECTION B
(4X10= 40 M) :

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Q 6	Write 8085assembly program along with algorithm to add two numbers stored in memory locations 7500H and 7501H. Check for carry, if carry is 0 then store 01 in register C or else store 0. Store the result and carry in 72E0H and 72E1H.	10	CO1
Q7	Analyze the multiplexing in 8085 and how to de-multiplex them for fetching memory location and read/write data. Draw the block diagram for ALE signal.	10	CO3
Q8	Draw the timing diagram of the following instruction for 8085 Microprocessor: a. STA A, 2050H b. MVI A,45h	10	CO2
Q9	Draw the architecture of 8051 microcontroller and explain the function of each block. Comment on why and when crystal oscillator should be connected externally. **OR** 10 numbers are stored from location 1000 onwards. Write an assembly language program to find the average of these. Draw the flowchart also.	10	CO2

	SECTION-C **(2X20 = 40 M)**		
Q10	Design a digital system using 8051 microcontroller for LED blinking sequentially (8 LEDs) and number (0-9) display on 7 segment display. Draw the connected network for the interfacing of LEDs and 7 segment displays. Write the program for the LED and Seven segment displays interfacing by using embedded C?	**20**	**CO3**
Q11	a) Design an 8085 interfacing for a Memory chips to configure a (32KX8) memory size using (4K x 8) RAM chip? b) Illustrate the features of Bit addressable memory of 8051. Discuss the PSW as a bit addressable register for 8051? **OR** a) Design a memory system for 8085 such that it should contain 2KB of EPROM and 2 KB of RAM with starting address 0000H and 0DE0H respectively? b) What are vectored interrupts? How is the address of the Interrupt Service routine calculated in vectored interrupts? Explain with an example.	**20**	**CO2**