

Department of Computer Science & Engineering National Institute of Technology Srinagar				
Course Title	Microprocessor Lab	Semester	5 th	
Department	Computer Science & Engineering	Course Code	CST308	
Credits	01	L	T	P
Course Type	Lab	0	0	2
Course Objectives				
<ul style="list-style-type: none"> To become familiar with the architecture and Instruction set of Intel 8085 microprocessor. To expose students, to the operation of typical 8085 microprocessor trainer kit. To provide practical hands on experience with Assembly Language Programming. Develop and test assembly language programs to use instructions of 8085. Get familiarize with interfacing of various peripheral devices with 8085 using 8279 chip. 				
Learning Outcomes				
By the end of this course, the students will be able to run programs on 8085 microprocessor based systems.				
Course Synopsis				
To enable a student to have a practical command over the concepts learned in the course.				
Course Outline / Content				
Unit	Topics			Week
1.	<ul style="list-style-type: none"> Develop a program to add two double byte numbers. Develop a subroutine to add two floating point quantities. 			1
2.	Develop program to multiply two single byte unsigned numbers, giving a 16 bit product.			1
3.	Develop subroutine which will multiply two positive floating point numbers.			1
4.	Write program to evaluate $P * Q + R$ & S are 8 bit binary numbers.			1
5.	Write a program to divide a 4 byte number by another 4 byte number			1
6.	Write a program to divide an 8 bit number by another 8 bit number up to a fractional quotient of 16 bit			1
7.	Write a program for adding first N natural numbers and store the results in memory location X.			1
8.	Write a program which decrements a hex number stored in register C. The Program should half when the program register reads zero.			1
9.	Write a program to introduce a time delay of 100 ms using this program as a subroutine display numbers from 01H to 0AH with the above calculated time delay between every two numbers.			1
10.	N hex numbers are stored at consecutive memory locations starting from X. Find the largest number and store it at location Y.			1

11.	Interface a display circuit with the microprocessor either directly with the bus or by using I/O ports. Write a program by which the data stored in a RAM table is displayed.	1
12.	Design and interface a circuit to read data from an A/D converter, using the 8255 A in the memory mapped I/O.	1
13.	<ul style="list-style-type: none"> • Design and interface a circuit to convert digital data into analog signal using the 8255 A in the memory mapped I/O. • Interface a keyboard with the microprocessor using 8279 chip and transfer the output to the printer. 	1
14.	Design a circuit to interface a memory chip with microprocessor with given memory map.	1

Text Books

1.	Microprocessor by Goankar
2.	Microprocessor by Douglas Hall

References

1.	8086/8088 family: Design Programming and Interfacing: John Uffenbeck
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