

2014

B.E. (Electrical and Electronics Engineering)
Fourth Semester
PC-EE-404: Microprocessor and Microcontroller

Time allowed: 3 Hours

Max. Marks: 50

NOTE: Attempt five questions in all, including Question No. 1 (Section-A) which is compulsory and selecting two questions each from Section B-C.

x-x-x

SECTION-A

- Q1 a) How does a microprocessor differentiate between data and instructions?
 b) Why is the data bus bidirectional and what is the size of the data bus for 8085 microprocessors?
 c) Specify the register contents & flag status after each instruction as the following instructions are executed in sequence.

A C	S	Z	CY						
XX	XX	0	0	0					initial contents

MVI A, 25H

ADI A2H

MOV C,A

HLT

- d) What is the advantage of Register Indirect Addressing Mode?
 e) What are the contents of IE register upon reset, and what do these values mean? (5*2=10)

SECTION-B

- Q2 a) Draw and explain the architecture of 8085 (5)
 b) Explain the instruction format in detail of 8085. (5)
- Q3 a) Write a program to find the greatest number from the numbers stored in memory location 8005 to 800A. (5)
 b) Explain sequential events when the INTR pin of 8085 goes high. (5)
- Q4 a) What is the stack memory? Explain the working of a stack and the instructions associated with them. (5)
 b) Write a program to generate a continuous square wave with the period of 200 μ s. Assume the system clock period as 325ns, and use bit D1 to output the square wave. (5)

SECTION-C

- Q5a) Differentiate between I/O mapped I/O & memory mapped I/O by considering relevant parameters. (5)
 b) What is serial communication? Explain the RS232C serial communication in detail. (5)
- Q6 a) With a suitable diagram explaining the interfacing of any input device. (5)
 b) Illustrate the BSR mode of 8255 and explain with the help of programming. (5)
- Q7 a) Draw the Pin Diagram of 8051 and explain the function of various signals. (5)
 b) Explain the addressing modes of 8051 in detail. (5)

x-x-x