2015
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 which is compulsory
and selecting two questions from each Unit.

x-x-x

I. Attempt the following:-

(a) What is the role of Stack in 8085 microprocessor?

(b) For a memory chip of size 4096 x 8, how many memory locations are there, how
many Addressing lines are required to connect it to an 8 bit processor?

(c) For time delay ,using a single register method ,what is the maximum delay
achieved if clock Frequency is 1MHz.

(d) How is Data Pointer different from Program Counter in 8051?

(e) What is the function of External Access pin in 8051?   (5x2)

UNIT - I

II. (a) Discuss the various addressing Modes of 8085 giving examples.

(b) A string of data bytes is stored starting from memory location XX50H and end of
the String is indicated by the byte 0DH. WAP to relocate the bytes to address XX80H
after Adding 05H to each byte.   (5,5)

III. (a) A string of 16 data bytes is stored starting from memory location 3000H. Write an
assembly language program to ignore all data in which the D7 and D0 bits are "1",
and relocate the remaining bytes at address 3200H

(b) What is the role of Stack & Subroutines? Write instructions associated with Stack.
                                                                          (5,5)

IV. (a) Explain data transfer during execution of "CALL" instruction.

(b) WAP to count in hexadecimal from FFH to 00H in a system with 0.5 μs clock period.
Use register D to set up a one millisecond delay between each count and display
Numbers at an output port.   (4,6)

P.T.O.

UNIT - II

V. (a) Give block diagram of Programmable Peripheral interface 8255.

(b) Discuss the control word for BSR and I/O Modes.   (5,5)

VI. (a) Discuss Memory organization of 8051.

(b) Design a schematic for interfacing a memory 2048 x 8 with 8085 Using a 74LS138 (3 to 8 decoder) ,thereby generating address range for the Memory IC from C000H to C7FFH.   (5,5)

VII. Write short notes on any three of the following :-

(a) Status signals in 8085

(b) SIM and RIM in 8085

(c) Peripheral Mapping

(d) Asynchronous vs Synchronous Communication   (4,3,3)

x-x-x