

**6E3086**

Roll No. \_\_\_\_\_

Total No of Pages: **3****6E3086****B. Tech. VI Sem. (Main & Back) Exam. May/June-2014****Electronics & Comm. Engineering****6EC2 Microprocessor and Microcontroller****Common With EX****Time: 3 Hours****Maximum Marks: 80****Min. Passing Marks: 24****Instructions to Candidates:-**

*Attempt any five questions, selecting one question from each unit. All Questions carry equal marks. Schematic diagrams must be shown wherever necessary. Any data you feel missing may suitably be assumed and stated clearly.*

*Units of quantities used/ calculated must be stated clearly.*

*Use of following supporting material is permitted during examination.*

1. \_\_\_\_\_

2. \_\_\_\_\_

**UNIT-I**

- Q.1 (a) Differentiate between memory mapped I/O and peripheral mapped I/O. Explain the timing diagram for data transfer in each case for an instruction. [4+8=12]
- (b) What are tri-state devices and why are they essential in a bus oriented system. [4]

**OR**

- (a) If the memory chip size is 2048×8 bits, how many chips are required to make up 16 k byte memory?
- (b) Explain the need to de multiplex the bus AD<sub>7</sub>– AD<sub>0</sub>.

- (c) Specify the crystal frequency required for an 8085 system to operate at 1.1MHz.
- (d) What is the memory word size required in an 8085 system. [4×4=16]

## UNIT-II

- Q.2 (a) Differentiate between Absolute and Linear decoding with an example for each. [8]
- (b) Explain the timing diagram of a 2-byte instruction - [8]

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### OR

- (a) Explain the process of address decoding and memory addressing by interfacing the decoder with EPROM. [8]
- (b) Explain the RISC and CISC architecture of the processors and discuss their salient features. [8]

## UNIT-III

- Q.3 (a) Write a program for creating a delay of 1 ms. Assume system clock frequency of 2 MHz [8]
- (b) Explain the techniques used in dynamic debugging of the programs. Give examples of each. [6+2=8]

### OR

- (a) Explain the data transfer during the execution of CALL and RET instruction with examples. [8]
- (b) Write a program to generate square wave with the period of 500 μs. Assume system clock period is 325 ns. Use bit Do to output the square wave. [8]

## UNIT-IV

- Q.4 (a) List the major components of the 8279 keyboard / display interface and explain their functions. [8]
- (b) Explain the operating modes of 8255 programmable peripheral interface. [8]

### OR

- (a) List the major components of the 8259 interface controller and explain their functions. [8]
- (b) Draw the pin diagram of 8253 programmable interval timer and explain functional block diagram of it. [8]

## UNIT-V

- Q.5 (a) Draw the pin diagram of 8051 micro controller and explain its functional architecture. [10]
- (b) Explain various timers and interrupts and their functions in 8051 micro controller. [6]

### OR

- (a) Explain the interfacing of LCD display with 8051 micro controller. [8]
- (b) Discuss any one real world application of 8051 micro controller. [8]