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 $AD_7 - AD_0$.

(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]

MVI A, 32H

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]