



B.E DEGREE EXAMINATIONS: MAY 2014

(Regulation 2009)

Sixth Semester

ELECTRICAL AND ELECTRONICS ENGINEERING

EEE112: Microprocessor and Microcontroller

Time: Three Hours

Maximum Marks: 100

Answer all the Questions:-

PART A (10 x 1 = 10 Marks)

- The data bus and low order address bus of 8085 processor are multiplexed, they can be demultiplexed by using _____
 - AD
 - ALE
 - S0
 - S1
- How many machine cycle is needed to execute STA 5340 and MVI B,44 instruction
 - 3 and 3
 - 4 and 2
 - 4 and 3
 - 3 and 2
- XCHG instruction is using _____ addressing mode.
 - Direct
 - Indirect
 - register
 - Implicit
- Calculate the delay count for the following loop with 2MHz clock freq to produce 1ms
MVI C, XX
Loop : DCR C
JNZ Loop
 - 8E
 - 9 A
 - 14
 - 2A
- _____ is used to store the request in 8259.
 - HLDA
 - HOLD
 - IRR
 - IER
- Initialization command word is used in _____.
 - 8255
 - 8253
 - 8259
 - 8257

PART C (5 x 14 = 70 Marks)

21. a) (i) Explain the internal hardware architecture of 8085 with neat diagram. (10)
(ii) Explain the 8085 interrupt process and differentiate maskable and non-maskable interrupts (4)

(OR)

- b) Draw the memory interface diagram to 8085 processor with 1 number of 8 KB EPROM and 2 number of 4 KB RAM. Explain the system and allocate binary addresses to memory IC's.

22. a) (i) Draw and explain the timing diagram for STA 4500 instruction. (7)
(ii) Specify the contents of memory locations 4100H to 4104H after execution of following instructions. (7)

```
LXI H,4100H
MVI B,05H
MVI A,01H
STORE : MOV M,A
INR A
INX H
JNZ STORE
HLT
```

(OR)

- b) (i) Explain the following instructions with examples:- (7)
SHLD 8850
XCHG
DAD rp
(ii) Explain the various addressing modes of 8085 with examples. (7)

23. a) (i) Explain in detail the operation of 8255 Programmable peripheral interface with neat diagram (10)
(ii) Design an interfacing circuit using 8255 and write the program to on and off LED with time delay of 1Sec. (4)

(OR)

- b) Draw and explain the block diagram of 8253 timer and its control registers.

24. a) Explain with neat diagram the architecture of 8051 microcontroller and its flag register.

(OR)

b) (i) Explain the memory organization of 8051 with neat diagram (10)

(ii) Explain any four bit manipulation instruction with examples. (4)

25. a) (i) Draw the timer/counter control logic and explain the different operating modes of timer. (10)

(ii) Write a program to generate a square wave from TIMER1 at 3KHz frequency (4)

(OR)

b) Draw and explain the schematic for Interfacing a stepper motor with 8051 Micro controller and write an ALP for rotating the motor in clockwise direction in single step excitation sequence
