5E3124-R

B. Tech. (Sem. V) (Main/Back) Examination, December - 2011
Electrical Engg.
5EE2 Microprocessors & Computer Architecture

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

Use of following supporting material is permitted during examination.
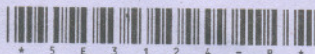*(Mentioned in form No. 205)*

1. _____NIL_____   2. _____NIL_____

UNIT - I

1 (a) Draw architecture of 8085 ? Explain various components.

4+4

(b) Explain interrupt process of 8085 and give sequence of steps in interrupt service routine.

4+4

OR

1 (a) What is Program Status Word in 8085 ? Explain it in detail by taking a suitable example.

8

(b) Explain pins of 8085 microprocessor ?

8

UNIT - II

2   (i)   Define in brief :
- (a)   CPU
- (b)   Address Bus
- (c)   Control Bus
- (d)   Data bus

         2×4

   (ii)   Differentiate features of 8085 and 8086 ?

         8

OR

2   (a)   Explain encoders and buffers in detail.

         8

   (b)   Explain various input/output devices.

         8

UNIT - III

3   (a)   Explain the following instructions using suitable example.
- (i)   DAD
- (ii)   RAL
- (iii)   XCHG
- (iv)   PUSH

         2×4

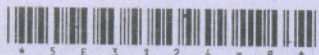   (b)   Write an assembly program for subtracting two 16 bit numbers.

         8

OR

3   (a)   Specify the register contents and fly status (S, Z, CY, AC) after the following program is executed

MVI A, B9H

MVI B, 47H

ADD B

ORA A

         2+2

(b) How many times the given loop will be executed ? What will be the contents of HL pair when the program control reaches to HLT instruction

```
        MVI A, OOH
        LXI H, 5003H
Loop :  DC X H
        DCR A
        JNZ Loop
        HLT
```
2+2

(c) Explain different types of instruction in 8085.

8

UNIT - IV

4 (a) Explain Registers and pins of 8257 chip ?

8

(b) Explain 8155 chip with the help of block diagram ?

8

OR

4 (a) Explain analog to digital conversion ?

8

(b) Explain 8253 chip with the help of block diagram.

8

UNIT - V

5 (i) Define the following :
   (a) Virtual and Physical Memory
   (b) PAL
   (c) PLA

4+4+4

(ii) Explain input/output interfacing.

4

OR

5 (i) Define the following :
   (a) Memory Latency
   (b) Memory Bandwidth
   (c) Memory Seek Time
   (d) Volatile and Non-volatile Memory.

2×4

(ii) Explain RAM architecture and basic Computer Architecture.

4+4