5E 5042

B. Tech. V Semester (Main/Back) Examination, Dec., 2014

ELECTRICAL ENGINEERING # 5EE2A

Microprocessors & Computer Architecture

Time : 3 Hours   Min. Passing Marks : 24   Maximum Marks : 80

Instruction 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.)

Unit-'I'

1. (a) Explain the various types of buses used in 8085 microprocessor. [8]

   (b) Draw the architecture of 8085 microprocessor and explain functions of various registers. [8]

OR

1. (a) How address lines are multiplexed? Explain in detail with the help of latching circuit diagram.[8]

   (b) Explain the control and status signals available in 8085 microprocessor. [8]

Unit-'II'

2. (a) Explain the following instructions of the 8085 microprocessor. [8]

   (i) STAX B

   (ii) XTHL

   (iii) XCHG

   (iv) SPHL

   (b) Write an assembly language program for finding 2's complement of a given 8 bit number. [8]

OR

2. (a) Mention various addressing modes in 8085 with suitable example. [8]

   (b) Explain the use of rotate instructions, with the help of suitable examples. [8]

Unit-'III'

3. (a) Explain the interfacing of 8257 to 8085 microprocessor. [8]

   (b) Draw the block diagram of programmable Interval Timer 8253 and explain its various blocks. [8]

OR

3. (a) Explain the control word in 8255 PPI. What are different modes of operations possible in 8255?[8]

   (b) Draw the block diagram of 8279 and explain the function of each block. Also describe its command word format. [8]

Unit-'IV'

4. (a) Draw internal architecture of 8086. Explain the function of various registers. [8]

   (b) Draw pin diagram and explain various pins of 8086 microprocessor in minimum and maximum modes. [8]

OR

4. (a) Draw the block diagram of 8086 microprocessor. and explain the following : [8]

   (i) Pipelining concept

   (ii) Segmented memory concept

   (iii) Extended register concept

   (b) Explain various instruction formats application to the 8086 instruction set Briefly describe addressing modes of 8086. [8]

Unit-'V'

5. (a) Write short note on (any two) :

   (i) Virtual Memory

   (ii) Different types of micro operations

   (iii) Different types of ROM

   (iv) Cache memory [16]