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Name : .....

Reg. No: .....

SIXTH SEMESTER B.TECH DEGREE EXAMINATION, JULY 2012

EE 2K 601 / PT EE 2K 501 – MICROPROCESSOR AND MICRO CONTROLLERS

Time : Three Hours **Maximum : 100 Marks**

I (a) Explain the addressing modes of 8085 up with examples.

(b) Write the 8086 instruction which will perform the operation listed below.

(i) Loads 43H into CL

(ii) Masks lower 4 bits of BL

(iii) Adds 07 H to DL

(iv) Copies DL to a memory location whose offset is in Bx.

(c) Discuss the importance of DMA transfer.

(d) List the features of programmable communication interface.

(e) Compare Pentium with 80 x 86 processors.

(f) What is TSS?

(g) Draw the internal RAM organization of 8051 and explain.

(h) Explain serial data transfer modes of 8051.

(8 x 5 = 40 Marks)

II (a) Draw the internal block diagram of 8086 up and explain its architecture.

(Or)

(b) Explain Type O, Type 1, Type 2, 3 and type 4 hardware interrupts and also the software interrupts in detail.

III (a) (i) Discuss 8255 PPI with block diagram.

(ii) (a) Show the control word needed to initialize 8255 as

Port A – handshake input

Port B – handshake output

Port C – bits PC6 and PC7 as olps.

(b) Show the bit set/reset control word needed to initialize the port A interrupt request and the port B interrupt request.

(Or)

(b) (i) A 74LS138 decoder has its three SELECT inputs connected to A_{12}, A_{13}, and A_{14} of the system address bus. It has G2A connected to A15, G2B connected to $\overline{RD}$ and G1 connected to +5V. Find the 8 ROM address blocks the decoder outputs will select. Why is $\overline{RD}$ used as one of the euables on a ROM decoder?

(ii) Explain the various registers associated with programmable interrupt controller.

IV (a) (i) Describe the memory management unit of 80386 μp.

(ii) Explain how a 386 system can be set up with four privelage levels.

(b) Explain the following with respect to Pentium processors.

(a) MMx Technology

(b) Branch prediction logic

(c) Pipelined data transfer

V (a) (i) Explain the various addressing modes of 8051 with example.

(ii) Discuss an 8051 microcontroller based application.

(Or)

(b) (i) Write an 8051 ALP to perform BCD addition of n byte BCD numbers.

(ii) Explain the mode 0 type of serial data transfer in 8051.

(4 x 15 = 60 Marks)

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