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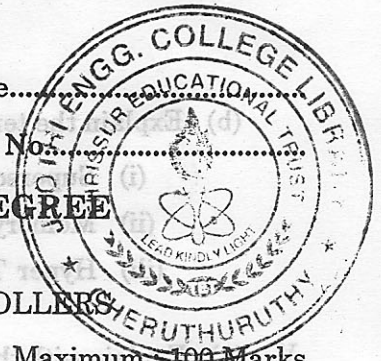Name....................................

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SIXTH SEMESTER B.TECH. (ENGINEERING) DEGREE EXAMINATION, DECEMBER 2010

EE 04 602—MICROPROCESSORS AND MICRO-CONTROLLERS

Time : Three Hours   Maximum : 100 Marks

Answer all questions.

I. (a) List the addressing modes supported by 8086 instruction set.

   (b) Distinguish between minimum mode and maximode of operation of 8086.

   (c) What is meant by DMA ? Name and explain about different ways in which DMA operation can be carried out.

   (d) Draw the framing for the character (whose ASCII Code is 404) in asynchronous serial communication and explain.

   (e) Differentiate between real and protected mode of operation of 80386.

   (f) What is meant by bank switching with reference to memory system of Pentium ? Explain.

   (g) Name the flag bits of 8051 micro-controller and explain the use of each one.

   (h) List the interrupt sources of 8051 along with their vector address. Also explain how the priority of these interrupts can be varied.

$$(8 \times 5 = 40 \text{ marks})$$

II. (a) Draw the pin diagam of 8086 in its minimum mode of operation and explain the use of each signal pin.

Or

   (b) Discuss about :

   (i) Loosely coupled configuration.

   (ii) Closely coupled configuration.

   (iii) Queue with reference to 8086.

III. (a) With the help of diagram, explain how 8255 can be interfaced to 8086.

Or

   (b) Explain how 8279 controls keyboard and screen segment LED dispaly.

IV. (a) Explain the use of the following signals of 80386 microprocessor :—

   (i) $\overline{BE_0}$ to $\overline{BE_3}$.   (ii) $M/\overline{IO}$.

   (iii) $\overline{ADS}$.   (iv) $\overline{READY}$.

   (v) $\overline{LOCK}$.   (vi) HOLD.

   (vii) $\overline{PEREQ}$.   (viii) $\overline{BUSY}$.

   (ix) $\overline{ERROR}$.   (x) INTR.

Or

Turn over

(b) Explain the terms :

    (i) Superscalar architecture.

    (ii) Memory bank switching in Pentium.

    (iii) Hyper Threading Technology.

(3 × 5 = 15 marks)

V. (a) Explain with the help of diagram, how a LCD display can be interfaced to 8051 micro-controller.

Or

(b) (i) List the different addressing modes supported by 8051 instructions and explain each one with suitable example.

(8 marks)

    (ii) Write a nested delay loop using 8051 instructions.   (7 marks)

[4 × 15 = 60 marks]