

**SIXTH SEMESTER B.TECH. (ENGINEERING) DEGREE  
EXAMINATION, JUNE 2009**

EE 04 602—MICROPROCESSORS AND MICROCONTROLLERS

(2004 admissions)

Time : Three Hours

Maximum : 100 Marks

*Answer all questions.*

1. (a) Name the four different segments with which 8086 work at a time. Also explain how to locate the segments in the address space of 8086.
- (b) State the functions of 8089 I/O processor.
- (c) Discuss about the BSR (bit set reset mode) mode of operation of 8255 PPI chip.
- (d) Explain the operation of 8259 in its Master mode.
- (e) What is meant by wait state ? How it can be introduced in a Pentium based system ?
- (f) Draw the memory map for the internal RAM (128 byte) of 8051 microcontroller.
- (g) Discuss about the Cache structure of Pentium.
- (h) Write a delay loop using 8051 instructions.

(8 × 5 = 40 marks)

2. (a) Draw the internal architecture of 8086 processor in block diagram form and explain.

*Or*

- (b) List the different addressing modes supported by 8086 instruction set and explain each one with suitable example.
3. (a) With the help of diagram, explain how an ADC chip can be interfaced to 8086.

*Or*

- (b) Explain how 8251 programmable communication chip transmit and receive data serially.
4. (a) Discuss about the special registers of 80386.

*Or*

- (b) Explain the use of the following signal pins of Pentium :—

- |  |                           |
|--|---------------------------|
| (i) $\overline{ADS}$ .                       | (ii) AP.                  |
| (iii) A HOLD.                                | (iv) $\overline{APCHK}$ . |
| (v) $\overline{BE}_7$ to $\overline{BE}_0$ . | (vi) $\overline{BRDY}$ .  |
| (vii) $\overline{BUSCHK}$ .                  | (viii) $D/\overline{C}$ . |

5. (a) List and explain the jump instructions of 8051 microcontroller.

Or

(b) Discuss about the interrupt structure of 8051 in detail.

(4 × 15 = 60 marks)