M.Tech SR-14

FIRST SEMESTER EXAMINATION, 2009-2010

ADVANCED MICROPROCESSORS AND APPLICATIONS

Time: 3hrs. *Max. Marks: 100*

Note: Attempt all questions. All questions carry equal marks.

Q1. Attempt any FOUR parts of the following questions regarding 8086 microprocessor. [4X5=20 Marks]

a. Draw and discuss the internal block diagram.
b. Explain the physical address formation.
c. Draw and discuss flag register in brief.
d. Explain the physical memory organization in brief.
e. Discuss the function of the signals (i) ALE (ii) READY (iii) HOLD and (iv) HLDA.

Q2. Attempt any **TWO** parts of the following [2X10=20 Marks]

a. Discuss the function of a sample and hold circuit? Show the interface connection of ADC 0808 and sample and hold circuit to a microprocessor.
b. Discuss the operating principle of successive type analog to digital converter.
c. What is data acquisition system? Show an interface connection of a data acquisition system to a microprocessor.

Q3. Explain the architectural diagram of any **TWO** parts of the following [2X10=20 Marks]

a. 8255 PPI
b. 8259 PIC
c. 8253 PC/IT

Q4. Attempt any **THREE** of the following [3X6⅔=20 Marks]

a. Define and explain the term addressing modes for an 8-bit microprocessor with suitable examples.
b. Discuss the difference between hardware interrupt and software interrupt. Write vector locations of
   (i) TRAP, RST5.5, RST6.5, RST7.5 and
   (ii) RST0, RST1, RST2, RST3, RST4, RST5, RST6, RST7.
c. Draw and explain the timing diagram for memory read/write operation.
d. Explain the flag registers and the different flags of 8085 and 8086 microprocessors.

Q5. Write short notes on any TWO parts of the following [2X10=20 Marks]

a. Motorola 68000 processor
b. Pentium processor
c. 8051 Micro-controller