

Code No: A4904, A5403

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
M.TECH I SEMESTER EXAMINATIONS, APRIL/MAY-2012
MICROPROCESSORS AND MICROCONTROLLERS
(COMMON TO ELECTRICAL POWER ENGINEERING, POWER ELECTRONICS AND
ELECTRIC DRIVES)**

Time: 3hours

Max. Marks: 60

**Answer any five questions
All questions carry equal marks**

- - -

- 1.a) Explain the architecture of 8086 with the help of neat block diagram.
- b) Explain different instruction formats of 8086 under different addressing modes.

- 2.a) Explain the minimum mode working of 8086 with a neat schematic diagram.
- b) Draw the timing diagram for memory write cycle in the maximum mode of 8086 and explain the same.

- 3.a) Explain different types of interrupts available in 8086. What is interrupt vector table? What is its significance in 8086?
- b) Explain how stack is used in handling interrupts of 8086.

- 4.a) What is the significance of memory paging in 80386? Explain the process of physical address calculation.
- b) Explain the architecture of Pentium Pro processor with the help of a neat block diagram and how is it different from Pentium processor.

5. Explain various modes of operation of 8255? What is the significance of various handshaking signals in mode 1 and mode 2 of 8255?

- 6.a) Explain the architecture of 8259 with the help of a neat block diagram. How can 8259 handle interrupt requests more than 8.
- b) Explain the modes of operation of 8253.

- 7.a) Explain the memory organization of 8051 microcontroller, also explain the flag register organization and functions of 8051.
- b) What are the various addressing modes available in 8051? Explain with examples.

- 8.a) Explain the different arithmetic and logical instructions available for 8051 in different addressing modes.
- b) Write an ALP for 8051 to arrange a list of 8 bit numbers in ascending order.