CODE NO: OR310552 OR

2005 JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY

III B.TECH I SEMESTER SUPPLEMENTARY EXAMINATIONS
INTERFACING WITH MICROPROCESSORS
(COMMON TO COMPUTER SCIENCE & ENGINEERING AND INFORMATIONTECHNOLOGY)

MAY 2005

TIME: 3 HOURS
MAX MARKS: 70

Answer any FIVE Questions
All Questions carry equal marks

1. Write short notes on the following:

(a) Relative and based addressing modes of 8086

(b) Interrupt structure of 8086

(c) Use of CALL and RET instructions in executing procedures

2. (a) Write brie°y about the importance of the 8086 LOOP instructions.

(b) Write an 8086 assembly language program sequence which uses the LOOP instruction to add the contents of M words beginning at the address ARRAY and stores the result in TOTAL.

3. (a) Bring out the importance of using procedures in assembly language programming.

(b) What is a recursive procedure ? Write a recursive procedure to calculate the factorial of a number N.
4. (a) Explain the term hand shaking as it applies to computer I/O system.

(b) Develop an I/O port decoder, using a PAL16OL.8, that generates 16-bit I/O strober for the 16 bit I/O port address 100 DH .....1001 H.....1003 H.....100 EH.....100FH.

5. (a) What is the advantage of DMA control data transfer over interrupt driven or program control Data transfer? Why are DMA control data transfers faster?

(b) With a neat °ow diagram, explain sequence of operations for DMA data transfer.

6. (a) Design a circuit to activate a actuator, based on a bit combination given by eight switches interfaced to a microprocessor

(b) Design a interface circuit to feed numbers 0-9 through a linearly encoded switches and to display the number on a seven segment LED through a mi- croprocessor

7. Explain write pre-compensation, data separation, phase locked loop and CRC in °oppy disk interface.

8. Write a program to initialize 8251 in synchronous mode with even parity, single SYNCH character, 7 bit data character. Then receive FFH bytes of data from a remote terminal and store it in the memory at address 5000 H: 2000H.