NAME_____ ROLLNO_____

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY-2008

III B.TECH II SEMESTER SUPPLIMENTARY EXAMINATIONS
MICROPROCESSORS AND MICROCONTROLLERS
(INSTRUMENTATION&CONTROL ENGINEERING)

AUG/SEP-2008

MARK-3 HOUR
MARK-80

ANSWER ANY FIVE QUESTIONS. ALL QUESTIONS CARRY EQUAL MARKS.

1. (a) Give the 8085 compatible flags of 8086 processors? Discuss the design of each flag?

(b) List out segmentation resisters of 8086? Explain how 8086 provides 1 MB memory address space using the segment registers? What is the purpose of extra segment?

2. (a) What is a recursive procedure? Write a recursive procedure to calculate the factorial of number N, where N is a two-digit Hex number?

(b) What are the loop instructions of 8086? Explain the use of DF flag in the execution of string instructions.

3. Describe the function of the following pins in 8086 maximum mode of operation.

(a) TEST
(b) RQ/GTo and RQ/GT1
(c) QSo & QS1
(d) So, S1 , S2

4. Interface a 12-bit DAC to 8255 with an address map of 0C00H to 0C03H. The DAC provides output in the range of +5V to -5V. Write the instruction sequence.

(a) For generating a square wave with a peak to peak voltage of 4V and the frequency will be selected from memory location 'F'.

(b) For generating a triangular wave with a maximum voltage of +3V and a minimum of -2V.

5. (a) Draw the circuit of TTL to RS232 and explain the necessity of this interface.

(b) Draw necessary circuit to interface 8251 to an 8086 based system with an address 0A0H. Write the sequence of instructions to initialize 8251 for synchronous transmission with odd parity, single SYNC character, 8-bit data character?

6. With detailed hardware and the associated algorithm, explain how a real time clock will be implemented in an 8086 based system.

7. (a) With a neat sketch explain the function of memory array of PROM?

(b) Draw the basic cell structure of EPROM and explain the principle of operation?

(c) Distinguish between EPROM and E2PROM? Mention their application areas?

8. (a) Discuss the interrupt structure of 8051? Mention the priority? Explain how least priority is made as highest priority?

(b) Explain the support given in 8051 instruction set to handle bit addressable RAM?