Code :CS3121

RA

III B.Tech I Semester(R05) Supplementary Examinations, May 2011
INTERFACING THROUGH MICROPROCESSORS
(Computer Science & Engineering)
(For students of RR regulation readmitted to III B.Tech I Semester R05)

Time: 3 hours **Max Marks: 80**

Answer any FIVE questions
All questions carry equal marks

⋆ ⋆ ⋆ ⋆ ⋆

1. (a) Explain in detail about the interrupt structure of 8086 microprocessor.
   (b) Give the 16-bit flag register format of 8086 and explain about each flag in detail.
2. Develop an 8086 assembly language program that uses a 16-bit unsigned integer as the search key and performs binary search on the sorted 16-bit unsigned integers.
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) Draw the circuit of wait state generation, which generation between 0 and 7 wait states and draw the corresponding timing diagram.
   (b) How is an 8086 entered into an wait state ? And how many wait states can be inserted in a machine cycle.
5. (a) Explain the functions of the following signals of 8257
      i. IOR
      ii. IOW
      iii. HRQ
      iv. MARK
      v. MEMR
      vi. MEMW
      vii. TC
      viii. AEN
   (b) Explain the programming of channel prioriteis and auto load feature of 8275 DMA controller.
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 microprocessor.
7. (a) Explain with a block diagram the working of successive approximation ADC and its interface.
   (b) Explain the working of incremental shaft encoder.
8. Interface 8251 with 8086 at an address 80H. Initialize it in asynchronous transmit mode, with 7 bit character size, band factor 16, one start bit, one stop bit, even parity enable. Further transmit a message 'HAPPY NEW YEAR' in ASCII coded form to a modem.

⋆ ⋆ ⋆ ⋆ ⋆