Code No: RR310501 **RR**

III B.Tech I Semester(RR) Supplementary Examinations, May 2011
INTERFACING THROUGH MICROPROCESSORS
(Common to Computer Science & Engineering, Information Technology and Computer Science & Systems Engineering)

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

Answer any FIVE Questions
All Questions carry equal marks

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1. (a) With a neat block diagram explain how the memory is accessed by 8086 microprocessor using address, data buses and the BHE line.
   (b) Distinguish between the vectored and non vectored interrupts. Describe the functions of INTR and NMI pins on 8086 microprocessor with examples. [8+8]
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. [16]
3. (a) Write short notes on the following string data transfer instructions :
      i. LODS
      ii. STOS
      iii. MOVS
   (b) Explain what the REPE prefix does when coupled with the SCASB instruction ? [12+4]
4. (a) Draw the simplified Read Write bus cycles of 8086 in minimum mode.
   (b) Explain how 8086 microprocessor enter into wait state. Draw the corresponding bus timing diagram using Ready input. [8+8]
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. [8+8]
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 [8+8]
7. Explain write pre-compensation, data separation, phase locked loop and CRC in floppy disk interface. [16]
8. (a) Explain the physical communication standards required to communicate between computer-computer communication or human-computer communication over long and short distances.
   (b) Draw the circuits for driving and receiving 20mA loop signals and explain theushright [8+8]

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