

**III B.Tech I Semester Supplementary Examinations, May 2005**  
**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) If an absolute address of the type 6A3D9H is given, express it in the form of CS : IP and explain what are the advantages of the memory segmentation. Discuss about the various segment registers in 8086.  
(b) What are the modes in which the 8086 can be used .How many lines are there in the multiplexed bus of 8086. Give the pin diagram separately for each mode of operation.
2. Develop an 8086 assembly language program perform the following : Assume a look-up table of 16 entries, each of which is 8-bit wide and a 4-bit key value, look up the table to find the conversion value. Set up the table to permit BCD to 7-segment code conversion.
3. (a) How is the LOCAL directive used within a macro sequence ? Explain with an example.  
(b) Develop a macro called ADD32 that adds the 32-bit contents of DX-CX to the 32-bit contents of BX-AX.
4. An 8086 system with 8255 interfaced at port A address F0H, as a block of 100 data bytes Stored in it. Another 8086 system with another 8255 interface at port A address 80H has another block of 100 data bytes stored in it. Interchange this blocks of data bytes between the two 8086 systems. Draw the necessary hardware scheme and write the necessary sequence of instructions. Both systems run on the same clock rate.
5. (a) Why is it necessary to send an end of interrupt (EOI) command to an 8259 at some time in an interrupt service routine  
(b) Describe the series of actions that DMA controller will perform after it receives a request From a peripheral device to transfer data from the device to the memory.
6. (a) Draw the scheme for connecting a 7 segment LED display with microprocessor and discuss the bit patterns in a common cathode display system  
(b) Design a interface circuitry with a microprocessor which receive two logical inputs from two switches and display the EXOR output of these inputs
7. Draw a block diagram for implementing a data acquisition system of 16 channels and explain its functioning

8. (a) Draw the block schematic of a serial communication Interface and explain how serial data communication takes place?
- (b) Summarize the RS-232 C control line definitions

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