

Code :RR320202

RR**III B.Tech II Semester(RR) Supplementary Examinations, April/May 2011
MICROPROCESSORS & INTERFACING****(Common to Electrical & Electronics Engineering, Electronics & Communication Engineering, Electronics & Instrumentation Engineering, Biomedical Engineering, Instrumentation & Control Engineering)****Time: 3 hours****Max Marks: 80****Answer any FIVE questions
All questions carry equal marks**

1. (a) Discuss the general functions of all general-purpose registers of 8086. Explain the special function of each register and instruction support for these functions.
(b) What is the use of segmentation? Discuss one application area. Explain how segmentation provides efficient task switching mechanism?
2. (a) Develop an assembly language program to multiply two BCD numbers of 2-digits each.
(b) Develop a PUBLIC procedure to convert 4-digit Hex to BCD number and return the value.
3. Why do we prefer interrupt driven data transfer than programmed I/O transfer? Show the complete hardware design to resolve the multiple interrupts based on priority?
4. (a) Draw the block diagram of 8255 and explain each block.
(b) What is BSR mode operation? How it is useful in controlling the interrupt initiated data transfer for mode 1 and 2?
5. (a) Draw the block diagram of 8251 and explain each block.
(b) Draw the flowchart showing how synchronous serial data can be sent from a port line using software routine.
6. (a) How many initialization command words are required for a single 8259 in an 8086 based system? Explain their format.
(b) Under what conditions type 0 interrupt is initiated? List out the instructions that may cause type 0 interrupt.
7. (a) Discuss the organization of FLASH memory. Explain FLASH memory command definitions.
(b) Why do you need wait states? Explain how wait states are generated?
(c) Give possible solutions to meet the processor access time requirements when memory is interfaced to the processor.
8. Interface three 8255's to 8051 with starting address of 0F000H. Show the hardware design. Write the instruction sequence to initialize all ports of first and second 8255 as output ports in mode 0 and in the third 8255 port A as output port in mode 1 and other ports as input in mode 0.
