Department of Electrical Engineering, IIT Bombay
EE309 Computer Organization, Architecture and Microprocessors: Tutorial Sheet V
The 8085: Associated Peripherals: 8255A, 8253/4, 8257/37

1. *Gaonkar 4Ed., Chapter 15*
   Specify the two control words that are necessary to set bit PC_6 (assume that the other ports are not being used).

2. *Gaonkar 4Ed., Chapter 15*
   Port A of the 8255A is set up in Mode 1, and the status word read is $18h$. Is there an error in the status word ?

3. What happens if one connects lines other than the least significant address lines AD_1 and AD_0, to the A_1 and A_0 lines of the 8255A ?

4. Given an 8255A chip, how will you make out if it is connected in the Peripheral-Mapped (Isolated) I/O mode, or the Memory-Mapped I/O mode ?

5. *Gaonkar 4Ed., Chapter 15*
   Set up the 8253/4 as a square wave generator with a $1ms$ period, if the input frequency to the chip is $1\ MHz$.

6. *Gaonkar 4Ed., Chapter 15*
   Design a five-minute timer (clock) using the 8253/4 and the interrupt technique. Display minutes and seconds.

7. *Gaonkar 4Ed., Chapter 15*
   Explain how the 8257/37 DMA controller transfers 64K bytes of data per channel with eight address lines.