Test Problems

a. **Interfacing with peripherals like keyboards, LEDs, 7 segment LEDs, LCDs, ADCs, etc,**

Q1. Sketch and explain the interface of 8x4 key matrix using 8:1 multiplexer, and a 3:8 decoder to 8051 microcontroller. Write an 8051 assembly program segment to input the code of keys.

Q2. Switch the interface of a single red LED to 8051 microcontroller. Write an 8051 assembly program segment to blink the LED at 5Hz.

Q3. Sketch the interface of a 4x7 segment LEDs to the 8051 microcontroller. Write an 8051 assembly program segment to display **IISc**

Q4. Sketch the interface of a 16ch x 1line LCD to the 8051 microcontroller. Write an 8051 assembly program segment to display **NPTEL**

Q5. Sketch the interface of an ADC 808 to the 8051 microcontroller. Write an 8051 assembly program segment to read an analog signal through the ADC

Q6. Sketch the interface of a DAC 08 to the 8051 microcontroller. Write an 8051 assembly program segment to output a ramp signal through the DAC.

Q7. Sketch the interface of a RTC 1307 to the 8051 microcontroller. Write an 8051 assembly program segment to read and write real time into the RTC.