Experiment 4 : Interfacing an ADC
Time : 1 day

A) Construct a stand-alone ADC circuit (without connecting to microcontroller) that runs in free running mode and verify its operation by applying its input using a potential divider. Output of the ADC to be observed by driving eight LEDs.

Points to note:

i) Go through the data sheet of ADC0809 and 555 Timer.
ii) Generate a clock (100 - 500 KHz) signal for the operation of ADC0809 by the IC 555 and feed it to the ADC.
iii) Give a suitable input to the ADC.
iv) Output of ADC to be connected to LEDs through 74245 and series resistors.

B) Construct the circuit to access O/P of ADC through 8255 port (J3 / J7) and save the ADC O/P in a memory location 9070H. Compare this with a fixed value located at 9090H and generate a signal going through 8255 port (J3/J7) which is "HIGH" when the acquired data is greater than the fixed value and remains "LOW" otherwise.

Points to note:

i) The signal generated can be verified by connecting a LED through resistor.