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All of the codes are in the proteus and simulated in the proteus. Note that all of the sections of the first question were merged into a single file. And all of the requirements are implemented inside a single file.

1 QUESTION 1

The AIN0 voltage is equal to $\frac{5 \cdot 10^3 \cdot 10}{R_1 + 10^3 \cdot 10}$.

The voltage that the humidity sensor generates when it's equal to 80 percent is equal to $0.034 \cdot 80 + 0.6 = 3.32$.

By putting equal both of the equations we reach to the number $R_1 = 5060\Omega$.

2 QUESTION 2

1. Because a 1 percent change in humidity causes a 7 number change in the adc calculated value, so the precision to which it can measure the humidity is $\frac{1}{7}$.