Here’s a structured breakdown of the smart environmental monitoring system components:

1. Temperature Sensor
   -Function: Measures ambient temperature
   -Interface: I2C or Analog
   -Power Supply: 3.3V to 5V
   - Estimated Cost: ₹450.00

2. Humidity Sensor
   -Function: Measures relative humidity
   -Interface: I2C or Analog
   -Power Supply: 3.3V to 5V
   -Estimated Cost: ₹500.00

3. Air Quality Sensor
   -Function: Measures air pollutants (e.g., CO2, NO2)
   -Interface: I2C or UART
   -Power Supply: 3.3V to 5V
   -Estimated Cost: ₹1300.00

4. Light Sensor
   -Function: Measures ambient light levels
   -Interface: Analog
   -Power Supply: 3.3V to 5V
   -Estimated Cost: ₹260.00

5. Pressure Sensor
   -Function: Measures atmospheric pressure
   -Interface: I2C or SPI
   -Power Supply: 3.3V to 5V
   -Estimated Cost: ₹850.00

6. Microphone
   -Function: Captures sound levels
   -Interface: Analog or I2S
   -Power Supply: 3.3V to 5V
   -Estimated Cost: ₹680.00

7. GPS Module
   - Function: Provides geographic location data
   - Interface: UART
   - Power Supply: 3.3V to 5V
   - Estimated Cost: ₹1000.00

8. Data Logger (SD Card Module)
   - Function: Stores sensor data
   - Interface: SPI
   - Power Supply: 3.3V to 5V
   - Estimated Cost: ₹500.00

9. Wi-Fi Module
   - Function: Provides wireless connectivity
   - Interface: UART or SPI
   - Power Supply: 3.3V to 5V
   - Estimated Cost: ₹850.00

10. Power Supply (Battery)
   - Function: Provides power to the system
   - Interface: N/A
   - Power Supply: 3.7V Lithium-ion Battery
   - Estimated Cost: ₹450.00

11. Voltage Regulator
   - Function: Regulates power supply to components
   - Interface: N/A
   - Power Supply: 3.3V or 5V
   - Estimated Cost: ₹280.00

12. Microcontroller (MCU)
   - Model: STM32F407
   - Function: Manages sensors, processes data, communicates with modules
   - Interfaces: I2C, SPI, UART, GPIO
   - Power Supply: 3.3V
   - Estimated Cost: ₹1100.00

So total estimated cost this smart environmental monitoring system reaches around ₹8000 to ₹9000

SUBMITTED BY : PRITHVIRAJ SINGH
(23BEEN0030)