**Practical 1: Introduction to Arduino Circuits**

**1(a) AIM: Introduction to Arduino Circuits and Breadboarding**

Overview of Arduino and its Capabilities

• The Arduino is a development board for the ATMEGA328 micro- controller.

• There are other useful features like input/output pins, a USB port for communication between the Arduino and a computer, and a 9V DC power connector. The different parts can be referred in the figure below.

• One of the reasons the Arduino is so popular is that it is super easy to write the Arduino code. Most microcontrollers are programmed with the C language or assembly code, which is difficult to mas- ter, whereas Arduino programming language uses C/C++, which is much easier to learn and use.

• The Arduino is a versatile electronics development platform, so you can connect a huge variety of input and output devices to it. Input devices could be a temperature sensor, magnetometer, PIR sensor, ultrasonic range finder, and many more.

Breadboarding basics for connecting components

• The rows of a solderless breadboard are connected inside, allowing you to connect components by plugging them into the same row as each other.

• The special long rails along the edges are for easy access to power and ground.