

**Practical No. 1**

Aim: Preparing Raspberry Pi: Hardware preparation and Installation

Reference Link:

<https://www.howtoforge.com/tutorial/howto-install-raspbian-on-raspberry-pi/>

<https://www.teachmint.com/tfile/studymaterial/class-7th/internetofthingsiot/iotlabmanualpdf/d85015cf-722b-4b50-86e4-0f456f91bfa0>

<https://www.studocu.com/in/document/arya-college-of-engineering-and-it/electronic-and-communication/raspberry-pi-bsc-it-practicals-manual/36979077>

<https://www.raspberrypi.com/software/operating-systems/>

**Practical No. 3**

Aim: Demonstrate Arduino Uno and its pins interfacing with IDE.

Reference Link:

<https://www.hackerearth.com/blog/developers/a-tour-of-the-arduino-uno-board/>

**Practical No. 4**

Aim: GPIO: Light the LED with Python with/without a button using either Uno/Raspberry Pi.

Reference Link:

<https://linuxhint.com/control-led-button-raspberry-pi/>

**Practical No. 5**

Aim: SPI: Camera Connection and capturing Images/Videos using SPI

Reference Link:

<https://iot4beginners.com/how-to-capture-image-and-video-in-raspberry-pi/>

<https://www.electronicwings.com/raspberry-pi/pi-camera-module-interface-with-raspberry-pi-using-python>.

**Practical No. 6**

**Aim:** GPIO: LED Grid Module: Program the 8X8 Grid with Different Formulas

**Reference Link:**

<http://www.pibits.net/amp/code/raspberry-pi-8x8-led-matrix-example.php>

**Practical No. 7**

**Aim:** Trigger a set of led GPIO on any IoT platform via any related web server

**Reference Link:**

<https://www.hackster.io/adhyoksh/controlling-gpio-pins-of-raspberry-pi-with-web-page-2d5bdc>

[https://www.pcbway.com/project/shareproject/IoT\\_Using\\_Raspberry\\_Pi\\_and\\_Python.html](https://www.pcbway.com/project/shareproject/IoT_Using_Raspberry_Pi_and_Python.html)

<https://iotdesignpro.com/projects/iot-controlled-web-server-using-nodejs-webserver-and-raspberry-pi>

**Practical No. 8**

**Aim:** Stepper Motor Control: PWM to manage stepper motor speed using Uno/Raspberry Pi.

**Reference Link:**

<https://keithweaverca.medium.com/controlling-stepper-motors-using-python-with-a-raspberry-pi-b3fbd482f886>