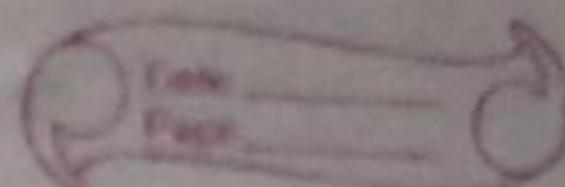


IOT Exp. 1



Title :- Study of IoT Microcontroller kits

e.g. Raspberry PI 3

Aim :- To Study IoT Microcontroller kit's like Raspberry PI 3 and Arduino.

Theory :- Internet of things

The IoT is the concept of connecting any device to the internet & to other connected devices.

The IoT is a giant network of connected things and people - all of which collect and share data about the way they are used & about the environment around them.

Microcontroller :- A microcontroller is a compact integrated circuit designated to govern a specific operation in an embedded system. A typical microprocessor controller includes a processor, sometimes referred to as an embedded controller or microcontroller unit (mcu).

Types of Microcontroller kits :

1. Arduino :- Arduino is the most popular open-source electronics prototyping platform to create interactive electric applications :-

i) Arduino UNO.

ii) LilyPad Arduino.

2. Raspberry Pi 3 Model B+ Development Board :-

i) Raspberry Pi 3 Model B+ :-

Raspberry Pi is a credit-card sized single-board computer designed and manufactured by the Raspberry Pi foundation in the UK.

Components :-

Model A & Model B. The only real differences are the addition of Ethernet & an extra USB port on the more expensive Model B.

ARM CPU / GPU :- This is a Broadcom BCM2835 System on a chip (SoC) that's made up of an ARM core CPU & a videocore 4 graphics processing unit (GPU).

- GPIO
- RCA
- Audio out
- LED's
- USB
- HDMI
- Power
- SD cardslot
- Ethernet

Linux Distributions for Raspberry Pi

- ① Raspbian Wheezy
- ② Soft-float Debian wheezy
- ③ Arch Linux ARM
- ④ gentooPi

3. The BeagleBone Black Development Board.

The BeagleBone Black is one of the popular open source computers. Now it comes with built-in wireless networking capability.

Features :-

- Processor : AM335x 1GHz ARM cortex - A8.
- 512 MB DDR3 RAM.

- 2 GB 8-bit eMMC on-board flash storage
- NEON floating-point accelerators
- 2x PRU 32-bit microcontrollers
- 3D graphics accelerators.

Conclusion :- Thus we have studied various microcontroller boards which are used in IoT.