SNS COLLEGE OF TECHNOLOGY

(An Autonomous Institution)

COIMBATORE-35

Accredited by NBA-AICTE and Accredited by NAAC – UGC with A++ Grade
Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

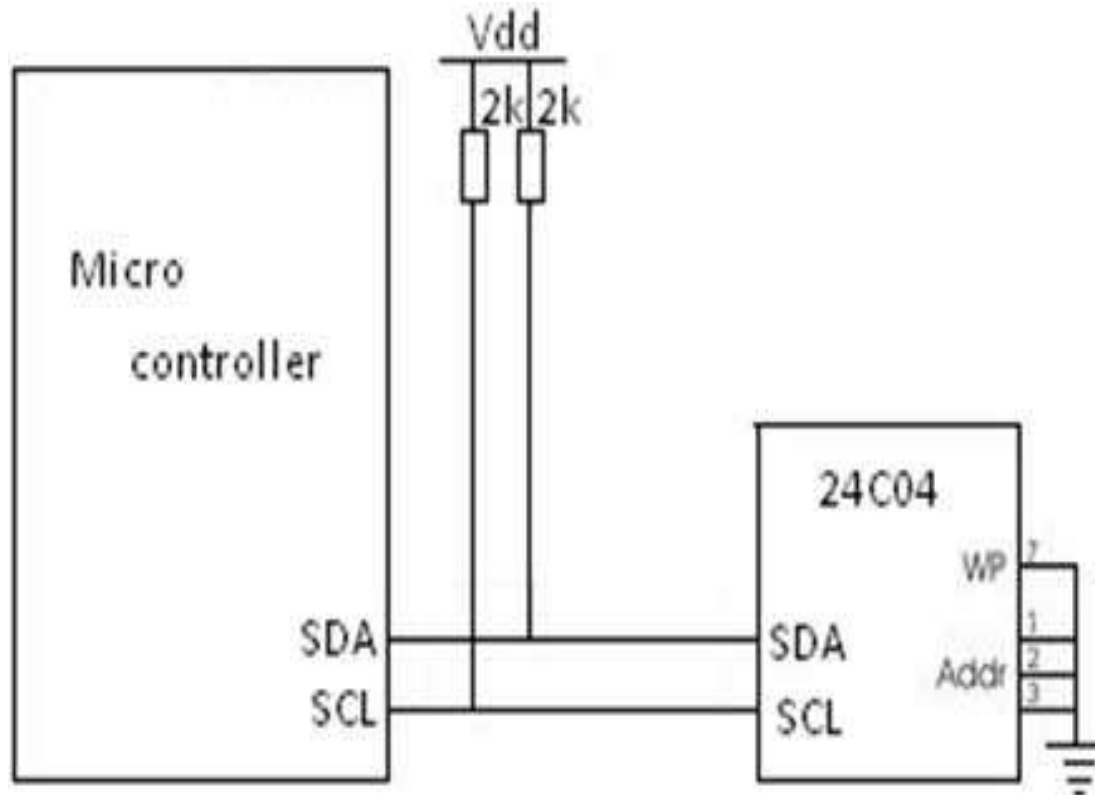## COURSE NAME: 19EEB303 / Microcontroller and its Applications

III YEAR / VI SEMESTER

Unit III – IOT - ARCHITECTURE REFERENCE MODEL

Topic:EEPROM

EEPROM

EEPROM

Interfacing I2C – EEPROM

Fig. 1 shows how to interface the EEPROM with microcontroller through I2C. I2C is a Master-Slave protocol. I2C has a clock pulse along with the data. Normally, the master device controls the clock line, SCL. This line dictates the timing of all transfers on the I2C bus. No data will be transferred unless the clock is manipulated. All slaves are controlled by the same clock, SCL.

I2c bus supports many devices, each device is recognized by a unique address—whether it's a micro-controller, LCD Driver, memory or keyboard interface and can operate as transmitter or receiver based on the functioning of the device. The controller designed controls the EEPROM device through I2C protocol. The I2C Controller here acts as a master device and controls EEPROM which acts as a slave. The read-write operations are accomplished by sending a set of control signals including the address and/or data bits. The control signals must be accompanied with proper clock signals.

EEPROM

Interfacing I2C – EEPROM with LPC2148 – ARM7 Advanced Development Board

We now want to Read, write and Erase EEPROM by using I2C in LPC2148 Advanced Development Board. Wiring up an I2C based EEPROM to the I2C port is relatively simple. The basic operation of the I2C based EEPROM's is to send a command, such as WRITE, followed by an address and the data. In WRITE operation, the EEPROM to store the data.

In LPC2148 Advanced Development Kit, 2 nos. of EEPROM lines are controlled by I2C Enabled drivers. I2C Lines serial clock SCL (P0.2), serial data SDA (P0.3) connected to the I2C based serial EEPROM IC. The EEPROM read & write operations are done in LPC2148 Primer Kit by using these SDA & SCL I2C lines.

EEPROM

Circuit Diagram to Interface I2C–EEPROM with <u>LPC2148 – ARM7 Advanced Development Board</u>