### III B.Tech – II Semester
### (17EC652) IoT USING RASPBERRY Pi LABORATORY
### (Skill Course Lab-I)

| Int. Marks | Ext. Marks | Total Marks | | L | T | P | C |
|---|---|---|---|---|---|---|---|
| 60 | 40 | 100 | | - | - | 3 | 2 |

**Pre-Requisites: IoT basics, Raspberry Pi Basics, Python programming Basics**

A) **IoT Basics:** IoT Introduction, Important Definitions and terminology, Architecture, Examples, communication Protocols
B) **Raspberry Pi Basics:** Different types of Raspberry pi models, Pin configuration of Raspberry pi Different types of OS for Raspberry Pi, OS installation into Raspberry pi.
C) **Python programming Basics:** Introduction to programming with Python, Data types, core objects and built in functions, conditional statements and loops, Functions, strings, Lists, Dictionaries, Tuples with examples.

**List of Experiments:**
Interfacing devices with Raspberry Pi using Python Programming
1. LED Blinking with Raspberry pi.
2. Button/Switch Interfacing
3. Relay and Buzzer Interfacing
4. IR/ PIR sensor interfacing
5. Servo motor interfacing
6. Ultrasonic sensor interfacing
7. DHT11 sensor Interfacing
8. LCD Interfacing
9. Controlling relay from cloud
10. Implementing IoT Gateway
11. Implementing MQTT protocol
12. Building a weather monitoring system
13. Building Home Automation System