CHAROTAR UNIVERSITY OF SCIENCE & TECHNOLOGY
FACULTY OF TECHNOLOGY AND ENGINEERING
K.D.PATEL DEPARTMENT OF INFORMATION TECHNOLOGY

Subject Name: Internet of Things **Semester** : VII
Subject Code: IT444 **Academic year:** 2022-23

Practical List

Sr. No.	Aim Of the Practical	Hrs.	LO	PO	PEOs
	Part-1				
1.	Installation of Instant contiki/cooja using vmware and in ubuntu Also perform (1)Hello world (2)Led (3)button click and timer	2	2	1	1,7
2.	To implement border router concept for RPL using tunslip facility and display light and temperature	2	2	2	1,7
3.	To check the quality of service parameters like power consumption, network graph, and sensor map using collect view application for RPL Protocol	2	2	5	3
4.	To compare fixed and mobile node scenarios for RPL protocol using bonnmotion and rplcollect view	2	1	4,3	9
5.	To perform COAP protocol implementation in Cooja/Contiki using sky motes	2	2	4,3	1,6
6.	Develop an Arduino C Sketch for the following Environment for the IoT Module ESP-32. Interface Analog Sensor (Potentiometer) at A0 pin of ESP-32 and display sensor value on serial Monitor.	2	1,3	3	1,7
7.	Develop an Arduino C Sketch for the following Environment for the IoT Module ESP-32 Initiate ESP-32 as an Access Point and display IP address of ESP-32 on serial monitor.	2	3,2	6	2
8.	Develop an Arduino C Sketch for the following Environment for the IoT Module ESP-32 Initiate ESP-32 as an Offline Web server. The web page contains two buttons 'ON' and 'OFF' for GPIO2.	2	3,2	6	2
9.	Develop an Arduino C Sketch for the following Environment for the IoT Module ESP-32 Interface Analog Sensor (Potentiometer) at A0 pin of ESP-32 and visulaize sensor value in form of graph on the thing speak as well as serial monitor.	2	3	5,9	2
10.	Develop an Arduino C Sketch for the following Environment for the IoT Module ESP-32 Interface Analog Sensor (Potentiometer) at A0 pin of ESP-32, Publish the sensor value from IoT module and subscribe the value in MQTT mobile application.	6	1	4,3	1,7

List of Open Source Software/learning website:

- **https://github.com/connectIOT/iottoolkit**
- **https://www.arduino.cc/**
- **http://www.zettajs.org/**
- Contiki (Open source IoT operating system)
- Arduino (open source IoT project)
- IoT Toolkit (smart object API gateway service reference implementation)