CO5	Apply Various kinds of Mining Techniques on different kinds of data.

INTERNET OF THINGS LAB			
Subject Code	18CSCSL7070	IA Marks	15
Number of Tutorial Hours/Week	03(P)	Exam Marks	35
Total Number of Practice Hours	36	Exam Hours	03
Credits – 1.5			

List of Experiments

Exercise1

Study on IoT Platform

a) Getting information and study of IOT microcontrollers (Arduino, Raspberry pi)

Exercise2

Study on IoT Platform

a) Getting information about Sensors (IR, temperature, pressure, gas sensor)

b) Getting information about actuators. (Piezoelectric actuator, pneumatic actuator)

Exercise3

Programming with Arduino platform

a) Installation of Arduino in computer and verifying any errors in connection.

b) Control LED using Arduino

c) Traffic Light Control

Exercise4

Programming with Arduino platform and Reading from Sensors

a) Interfacing sensors to Arduino board and getting information from them (any two sensors).

b) Experiment with both analog and digital sensors.

Exercise5

Programming with Raspberry pi

a) Displaying Date on Serial Monitor

b) Automated Door Opening System

Exercise6

Connecting Android Phone with Arduino

a) Connecting Arduino with Mobile Device Using the Bluetooth Module.

b) Control any two actuators connected to the development board using Bluetooth.

Exercise7

Integrating Ethernet Shield

Read data from sensor and send it to a requesting client using socket communication.
Note: The client and server should be connected to same local area network

Exercise 8

Creating Mobile App

a) Create a mobile app to control an actuator.

b) Control Electronic Devices from anywhere across the world using Internet & Mobile App.

Exercise9

Interfacing Cloud

a) Push sensor data to cloud - Use Arduino to Upload data from Environmental Sensors to Cloud Server.

b) Control an actuator through cloud

Exercise10

Data analysis and Visualization

Access the data pushed from sensor to cloud and apply any data analytics or visualization services.

Exercise11

Social media with IoT

Creating Program for Local host Web Server for controlling devices and update status on Twitter through Arduino.

Exercise12

Mini Project

Identify a problem in your local area or college which can be solved by integrating the things you learned so far and create a prototype to solve it.

Course Outcomes:	
CO1	Choose the sensors and actuators for an IoT application
CO2	Select protocols for a specific IoT application
CO3	Utilize the cloud platform and APIs for IoT application
CO4	Experiment with embedded boards for creating IoT prototypes
CO5	Design and develop a solution for a given IoT application