Roll No											

PRESIDENCY UNIVERSITY
BENGALURU

SCHOOL OF ENGINEERING
END TERM EXAMINATION - JUN 2023

Semester : Semester IV - B.Tech ECE - 2020
Course Code : ECE3075
Course Name : Sem IV - ECE3075 - IoT Architecture and Protocols
Program : B.Tech. Electronics and Communication Engineering

Date : 19-JUN-2023
Time : 9.30AM - 12.30PM
Max Marks : 100
Weightage : 50%

Instructions:
(i) Read all questions carefully and answer accordingly.
(ii) Question paper consists of 3 parts.
(iii) Scientific and non-programmable calculator are permitted.
(iv) Do not write any information on the question paper other than Roll Number.

PART A

ANSWER ALL THE QUESTIONS **(5 X 4 = 20M)**

1. It is known that the Google Cloud has an end-to-end platform for Internet-of-Things solutions. Define Google Cloud and mentions its application in IoT. (CO3) [Knowledge]

2. The purpose of weather monitoring system is to collect data on environmental conditions. With a simple diagram define process specification and domain model used in weather monitoring system. (CO4) [Knowledge]

3. IoT-based technology offers advanced levels of services and practically change the way people lead their daily lives. Advancements in medicine, power, gene therapies, agriculture, smart cities, and smart homes are just a very few of the categorical examples where IoT is strongly established. How would you best describe IoT? Why IoT has gained so much buzz in the recent years? (CO1) [Knowledge]

4. The purpose of weather monitoring system is to collect data on environmental conditions. With a simple diagram define process specification and domain model used in Weather Monitoring System. (CO2) [Knowledge]

5. IPV4 and IPv6 are the protocol which helps to identify the devices on the internet network. Which is the layer these protocol are applicable. Explain their structure. (CO3) [Knowledge]

PART B

ANSWER ALL THE QUESTIONS **(4 X 15 = 60M)**

6. IoT architecture elements vary based on applications of use. Based on this fact, various deployment levels are defined for an IoT system. Consider an air conditioner whose temperature has to be monitored continuously. Demonstrate the application of temperature monitoring in an air conditioner with all the IoT deployment levels in the IoT system.

(CO1) [Comprehension]

7. Edge computing and Cloud comuting are the two methods where there is trade between the customers. List the parameters that will help customer to understand what is basic difference between these two mdels. As new company which model will be suitable to me edge computing or fog computing.

(CO4) [Comprehension]

8. The primary hardware components that make up an Embedded system are Sensors, ADC and DAC, Processor, Memory and Actuator. With this information explain an Embedded system of IoT devices.

(CO2) [Comprehension]

9. The communication between physical layer and cloud services involve technologies Ethernet, wifi, NFC, Bluetooth, LPWAN, Zigbee and Cellular networks. Contrast between different technologies with brief description.

(CO3) [Comprehension]

PART C

ANSWER ALL THE QUESTIONS **(2 X 10 = 20M)**

10. A weather monitoring system is designed to monitor temp, humidity and wind, and all other parameters that can help farmers to take appropriate decisions for the season. As IoT Designer draw a deyoploment model for weather monitering system. Identify the various nodes and explain. How cliud based app can help to show the various parameters.

(CO1) [Application]

11. A biometric attendance system is required to be implemented across the campus of the university using the star, mesh, and peer-to-peer topologies. Formulate briefly describing the suitable topology for long range, medium range and short range.

(CO4) [Application]