PARUL UNIVERSITY
FACULTY OF ENGINEERING & TECHNOLOGY
B.Tech. Summer 2018 - 19 Examination

Semester: 8   Date: 29/04/2019
Subject Code: 03105452   Time: 10:30 am to 01:00 pm
Subject Name: Cyber Physical System   Total Marks: 60

Instructions:
1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.

Q.1 Objective Type Questions - (Fill in the blanks, one word answer, MCQ-not more than Five in case   **(15)**
of MCQ) (All are compulsory) (Each of one mark)

1. Number of Devices can be connected to Zigbee at a time?
   a) 10-15
   b) 5-10
   c) 50000
   d) More than 65000

2. The huge number of devices connected to the Internet of Things has to communicate automatically, not via humans. What is this called?
   a) Skynet
   b) Bot 2 Bot
   c) Machine 2 Machine
   d) Intercloud

3. CoAP is specialized in?
   a) Internet applications
   b) Device applications
   c) Wireless applications
   d) Wired applications

4. Choose the correct arduino Shield from following
   a) Arduino WiFi
   b) Arduino Robot
   c) Arduino Uno
   d) Arduino yun

5. Who will use their own IoT business models?
   a) PaaS
   b) SaaS
   c) IaaS
   d) Service provider

6. Internet of Things (IoT) can be integrated with which of these separate domains:
   a) Cloud-based storage and computing.
   b) Cyber Physical Systems.
   c) Big-data networks.
   d) All of these.

7. Which of these is NOT related to IoT scalability?
   a) Flexibility within Internet.
   b) Large scale deployment.
   c) Real-time connectivity of billions of devices.
   d) Range of each sensor node.

8. A DC motor is a type of :
   a) Pneumatic actuators
   b) Hydraulic actuators
   c) Electrical actuators
   d) Mechanical actuator

9. The internet of things run on many communication protocols.. Which of these is not a standard body or protocol?
   a) Zigbee
   b) AllSean
   c) Tyrell
   d) Z-Wave

10. _____ allows us to control electronic components.
11. MQTT is better than HTTP for sending and receiving data. **True/False**
12. CoAP runs over UDP protocol to keep overall implementation _____.
13. Define Embedded system.
14. XMPP stands for ?
15. Give full name for 6LoWPAN.

Q.2 Answer the following questions. (Attempt any three)　　　　　　　　　　　**(15)**
　　A) Discuss about NFC & RFID.
　　B) Explain IOT application & deployment in different scenario.
　　C) What are challenges faced for implementation of IOT.
　　D) Design and Explain IOT- service based architecture.

Q.3 A) Write an arduino code to blink LED is ascending order.　　　　　　　　**(07)**
　　B) What is role of MQTT protocol in IOT explains with PUB/SUB mechanism.　**(08)**
　　　　　　　　　　　　　　　　OR
　　B) Discover use of CoAP requirements with help of diagram.　　　　　　　　**(08)**

Q.4 A) Write a note on Wearble IOT in healthcare and explain with example.　　**(07)**
　　　　　　　　　　　　　　　　OR
　　A) Write a note on Smart waste management and explain with example.　　　　**(07)**
　　B) Compare zigbee & classic Bluetooth.　　　　　　　　　　　　　　　　**(08)**