



AUTUMN END SEMESTER EXAMINATION-2019

7th Semester B.Tech & B.Tech Dual Degree

INTERNET OF THINGS

IT-4021

(For 2017 (L.E), 2016 & 2015 Admitted Batches)

Time: 3 Hours

Full Marks: 60

Answer any SIX questions.

Question paper consists of four sections-A, B, C, D.

Section A is compulsory.

Attempt minimum one question each from Sections B, C, D.

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable and all parts of a question should be answered at one place only.

SECTION-A

1. Answer the following questions. [2 × 10]
- (a) Define sensor and actuator.
 - (b) How you can differentiate between “Internet of Things”(IoT) to “Internet of Anything”?
 - (c) What is the difference between security and Privacy?
 - (d) Differentiate between IPv4 and IPv6.
 - (e) Explain the advantages of UDP over TCP protocol.
 - (f) What is MAC address?
 - (g) Explain REST based communication.
 - (h) Differentiate between HTTP, HTTPS and SSH.
 - (i) Compare between push-pull and publish-subscribe model in IoT.
 - (j) Explain the role of task tracker in hadoop cluster.

SECTION-B

2. (a) Define five main components of IoT with brief explanation of each components. [4]
(b) Is cloud an important component of IoT? Can't we create an IoT infrastructure without the cloud? Explain with suitable justification. [4]
3. (a) What is an observer node? Explain its role and how they coordinate with other IoT units. [4]
(b) Write the working principle, features and Physical and MAC frame types of ZigBee protocol. [4]

SECTION-C

4. (a) Explain the **Bluetooth** technology? How it is different than RFID technology. [4]
(b) What is network function virtualization(NFV)? Explain the NFV architecture in IoT. [4]
5. Explain with diagram how the software defined network(SDN) controls the network in IoT. [8]
6. (a) Differentiate between IoT and machine-to-machine(M2M) with applicable test cases in each. [4]
(b) Explain four important components of Raspberry pi board. [4]

SECTION-D

7. (a) Explain the functionality of MQTT protocol with its applications. [4]
(b) Explain process specification step used in IoT design methodology. [4]

8. Write short notes on any two

[4 × 2]

- (a) 6LoWPAN
- (b) BigData
- (c) IoT applications in Environment
