

**M TECH**  
**(SEM-II) THEORY EXAMINATION 2018-19**  
**INTERNET OF THINGS**

Time: 3 Hours

Total Marks: 70

Note: Attempt all Sections. If require any missing data; then choose suitably.

## SECTION A

1. Attempt all questions in brief.

2 x 7 = 14

- a. What are the advantage of carrier sense multiple access protocol?
- b. State the relationship between data rate and bandwidth.
- c. Compare TCP/IP and OSI model data communication Networks.
- d. What are the advantages of sensor network?
- e. What is Internet of thing?
- f. What is relationship between computation and communication?
- g. What did you understand by hybrid MAC protocol?

## SECTION B

2. Attempt any three of the following:

7 x 3 = 21

- a. Explain the different network topologies in detail.
- b. Explain the application of sensor network in detail.
- c. Explain Low duty cycle protocols and wakeup concepts.
- d. What is Importance of impact and open innovation in data-driven decision Making?
- e. Differentiate between Business Intelligence and Artificial Intelligence.

## SECTION C

3. Attempt any one part of the following:

7 x 1 = 7

- (a) What are Architectural design considerations for IOT?
- (b) Explain Predictive and Prescriptive Analytics for IOT.

4. Attempt any one part of the following:

7 x 1 = 7

- a). Draw and explain Single-node architecture of wireless sensor network (WSN).
- b) Draw the network architecture IEEE 802.15.4 MAC protocol.

5. Attempt any one part of the following:

7 x 1 = 7

- (a) What are the Design principles for WSNs. (wireless sensor networks).
- (b) What is Importance of impact and open innovation in data-driven decision making?

6. Attempt any one part of the following:

7 x 1 = 7

- (a) Why gateways needed? Explain WSN to Internet communication.
- (b) Draw and explain frame structure Contention-based protocols.

7. Attempt any one part of the following:

7 x 1 = 7

- (a) Explain WSN tunneling in detail.
- (b) What are different Characteristics of MAC Protocols in Sensor Networks?