

# CBCS SCHEME



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15EC752

Seventh Semester B.E. Degree Examination, Jan./Feb. 2021

## IOT and Wireless Sensor Networks

Time: 3 hrs.

Max. Marks: 80

Note: Answer any FIVE full questions, choosing ONE full question from each module.

### Module-1

- 1 a. Draw the oracle reference architecture of IoT and mention its features. (08 Marks)
- b. Describe adaption layer gate way, data enrichment, data consolidation and device management functions. (08 Marks)

OR

- 2 a. Explain the modified OSI model for IoT/M2M systems. Explain COAP – SMS in brief. (08 Marks)
- b. Explain the features of XMPP with neat block diagram. (08 Marks)

### Module-2

- 3 a. Compare the features in IPV<sub>4</sub> and IPV<sub>6</sub>. (08 Marks)
- b. List the features of 6LOWPAN with neat diagram. (08 Marks)

OR

- 4 a. What are deployment models for cloud services for IoT applications? (08 Marks)
- b. Explain IoT cloud based data collection, storage and computing services using Nimbits. (08 Marks)

### Module-3

- 5 a. List the additional features in Intel Galileo device plat form over Arduino, Tabulate for comparing the usages and features of IDE's for Raspberry Pi. (08 Marks)
- b. List five levels of software which need to be developed for applications and services for IoT and M2M. Write the features of Eclipse IoT stack. (08 Marks)

OR

- 6 a. What do you mean by trust? Define message privacy list the main vulnerabilities for attack? (08 Marks)
- b. Draw layered attacker model and explain the solutions for mitigating the attacks on the layer. (08 Marks)

### Module-4

- 7 a. What are the challenges for wireless sensor networks, mention required mechanisms. (08 Marks)
- b. Explain hardware components of single node architecture of WSN with neat diagram. (08 Marks)

OR

- 8 a. Explain the transceiver structure with neat diagram and explain briefly the enabling technologies for wireless sensor networks. (08 Marks)
- b. Explain event based programming model for WSN, what is the need for gate way? Explain how WSN is connected to internet. (08 Marks)

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.  
2. Any revealing of identification, appeal to evaluator and /or equations written eg. 42+8 = 50, will be treated as malpractice.

**Module-5**

- 9 a. Explain the design considerations for physical layer and transceiver in brief. Mention how the mediation device protocol is helpful for achieving low duty cycle. (08 Marks)  
b. Explain SMACS and LEACH protocol with neat diagram. (08 Marks)

**OR**

- 10 a. What are the features to be considered for energy efficient routing explain in brief. (08 Marks)  
b. Explain geographic routing in brief. (08 Marks)

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