

# CBCS SCHEME

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18ECS333

## Third Semester M.Tech. Degree Examination, Jan./Feb. 2021 Internet of Things (IOT)

Time: 3 hrs.

Max. Marks: 100

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

### Module-1

- 1 a. Elaborate the concept IOT and Digitization. Give a detailed explanation on Genesis of IOT. (10 Marks)  
b. List and explain the requirements driving specific architectural changes for IOT. (10 Marks)
- OR**
- 2 a. With a neat diagram, explain simplified IOT architecture. (10 Marks)  
b. Discuss IOT challenges. (10 Marks)

### Module-2

- 3 a. Explain IOT data management and compute stack with Fog computing. (10 Marks)  
b. Briefly explain the Layer 1 of IOT communication network. (10 Marks)
- OR**
- 4 a. Discuss the various group of ranges available under Access Network Sublayer. (10 Marks)  
b. Write a short note on : i) Analytics versus Control Application  
ii) Data versus Network Analytics. (10 Marks)

### Module-3

- 5 a. List and describe any eight different types of sensors with suitable example. (08 Marks)  
b. Briefly explain protocol stacks utilizing IEEE802.15.4. (12 Marks)
- OR**
- 6 a. What are the features incorporated in NB-IOT over LTE? With neat diagram, explain the various modes of operations applicable to NB-IOT. (10 Marks)  
b. Briefly explain the communication criteria with respect to range, topology and constrained devices. (10 Marks)

### Module-4

- 7 a. Write a note on business case for IP. Mention the key advantages of internet protocol and briefly explain them. (10 Marks)  
b. Discuss on IOT application transport methods. (10 Marks)
- OR**
- 8 a. Discuss the need for optimization. (10 Marks)  
b. Explain : i) Structured versus unstructured data ii) IOT data analytics overview. (10 Marks)

### Module-5

- 9 a. Explain in detail smart city IOT architecture. (10 Marks)  
b. Explain various zones and levels incorporated under industrial automation and control systems. (10 Marks)
- OR**
- 10 a. With neat diagram, explain substation automation hierarchy and IEC 61850 based substation architecture. (10 Marks)  
b. Explain : i) Resilient Ethernet Protocol ii) Smart Street Lighting. (10 Marks)

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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.