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17EC752

## Seventh Semester B.E. Degree Examination, Feb./Mar. 2022 IOT and Wireless Sensor Networks

Time: 3 hrs.

Max. Marks: 100

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

### Module-1

- 1 a. Explain the IBM IOT conceptual Framework. Describing the function of each level. (08 Marks)  
b. What are the major components of IOT system? (08 Marks)  
c. Differential between software and Firmware. (04 Marks)

OR

- 2 a. What are the functions of gateway at data adaptation layer? (08 Marks)  
b. Explain the various wireless communication technologies. (08 Marks)  
c. State the 3 domains of M2M architecture. (04 Marks)

### Module-2

- 3 a. Explain 6LoWPAN protocols. (08 Marks)  
b. State and explain any 2 application layer protocols. (08 Marks)  
c. Differentiate cloud, grid and web computing. (04 Marks)

OR

- 4 a. Explain and compare the features of IPV4 and IPV6. (08 Marks)  
b. Explain IOT cloud service using Nimbits (08 Marks)  
c. State the function and DHCP protocol. (04 Marks)

### Module-3

- 5 a. Explain how temperature can be measured using Arduino UNO. (10 Marks)  
b. Explain the security homography and layer attack models. (10 Marks)

OR

- 6 a. Explain the steps involved in programming MQTT client and Server. (10 Marks)  
b. Explain the following: i) Use Miscues cases ii) IOT privacy and security. (10 Marks)

### Module-4

- 7 a. Explain about transceivers – structures, tasks and characteristics. (10 Marks)  
b. Explain about energy consumption and requirements of batteries for WSNs. (10 Marks)

OR

- 8 a. Explain the programming Paradigms and programming models. (10 Marks)  
b. Explain node mobility, sink mobility and event mobility. (10 Marks)

### Module-5

- 9 a. Explain SMACS protocol. Also explain the 4 cases of link setup. (10 Marks)  
b. Explain about multipath unicast routing. (10 Marks)

OR

- 10 a. Explain about hierarchical network of clustering. (10 Marks)  
b. Explain PAMAS and TRAMA. (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.