INSTITUTE OF AERONAUTICAL ENGINEERING
(Autonomous)
M.Tech I Semester End Examinations (Regular) - January, 2019
Regulation: IARE–R18
WIRELESS SENSOR NETWORKS

Time: 3 Hours   (CSE)   Max Marks: 70

Answer ONE Question from each Unit
All Questions Carry Equal Marks
All parts of the question must be answered in one place only

UNIT – I

1. (a) Explain about Wireless Sensor Network Architecture with neat sketch. **[7M]**

   (b) Define Motes. Explain the components involved in mote architecture. **[7M]**

2. (a) Discuss briefly about the various applications related to wireless sensor networks. **[7M]**

   (b) Write the importance of cross layer design in wireless sensor networks and explain it with neat sketch. **[7M]**

UNIT – II

3. (a) Define Topology. Explain how to build topologies by considering example using ns3 simulator. **[7M]**

   (b) Illustrate different queues used in Network Simulator-3(NS3) with examples. **[7M]**

4. (a) Define Simulation. How Network Simulator-3(NS3) is different from NS2? **[7M]**

   (b) Describe Network Simulator-3(NS3) modules and routing process with example. **[7M]**

UNIT – III

5. (a) Write any two medium access control protocols in WSN and explain with an example. **[7M]**

   (b) Explain discrete time Markov chain model with example. **[7M]**

6. (a) Explicate asynchronous duty cycle and problems in that scheme. **[7M]**

   (b) Elucidate fixed access and random access methods in Medium Access Control Protocols(MAC). **[7M]**

UNIT – IV

7. (a) Discuss the counter measures in security with example. **[7M]**

   (b) Explain about static and dynamic key distribution of security. **[7M]**

8. (a) Define attack. What are the different types of possible attacks? Explain them briefly. **[7M]**

   (b) Describe SPINS. Explain security protocols for sensor networks related to SPINS. **[7M]**

UNIT – V

9. (a) Explain about resource-aware and broadcast routing protocols in wireless sensor networks. **[7M]**

    (b) Discuss about analysis of opportunistic routing in wireless sensor networks. **[7M]**

10. (a) Define MANET. Explain the types of MANET protocols. **[7M]**

    (b) Summarize the operations and properties of LEACH protocol. **[7M]**

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