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Fifth Semester MCA Degree Examination, Dec.2018/Jan.2019
Mobile and Ad-hoc Sensor Networks

Time: 3 hrs.   Max. Marks:100

Note: *Answer any FIVE full questions.*

1   a. Define wireless networks. Explain the 4G network architecture with its capabilities.
        (10 Marks)
    b. Explain the Bluetooth protocol stack with a neat diagram.   **(10 Marks)**

2   a. Explain the IEEE802.11 architecture. Discuss how hidden and exposed station problems are handled in Distrusted Coordination Function(DCF).   **(12 Marks)**
    b. What is Piconet? Explain the three stages of Piconet establishment process. **(08 Marks)**

3   a. Explain localized routing protocols with a neat diagram.   **(10 Marks)**
    b. Explain the existing Adhoc localization approaches.   **(10 Marks)**

4   a. Explain the design goals of Adhoc network routing protocols.   **(08 Marks)**
    b. What are the different routing approaches in Ad-hoc networks? Explain reactive routing approach in detail.   **(12 Marks)**

5   a. What are the basic strategies of power save protocols in network layer? **(06 Marks)**
    b. Write a note on wormhole attack.   **(04 Marks)**
    c. Explain the security mechanism in data link layer for MANET.   **(10 Marks)**

6   a. Explain the performance metrics need to be considered in MANET simulation. **(10 Marks)**
    b. Explain the hardware and software components of wireless sensor networks with a neat diagram.   **(10 Marks)**

7   a. Explain the various applications of wireless sensor networks.   **(10 Marks)**
    b. Explain the performance requirements of MAC protocol design for wireless sensor networks.   **(10 Marks)**

8   a. What are the resource constraints for wireless sensor networks?   **(05 Marks)**
    b. What are the basic phenomena affecting radio signals in wireless sensor networks.
        (05 Marks)
    c. Explain 3GPP in detail.   **(10 Marks)**

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