Code No: **R42047**

R10

IV B.Tech II Semester Regular Examinations, April/May - 2014
WIRELESS SENSOR NETWORKS
(Common to Electronics & Communication Engineering and Electronics & Computer Engineering)

Time : 3 hours   **Max. Marks: 75**
Answer any Five Questions
All Questions carry equal marks
*****

1   Define Wireless Sensor Networks? Explain in brief about the Applications of Wireless Sensor Networks?   [15]

2 a) Explain in brief about Single node Architecture?   [8]
   b) Explain in brief about energy Consumption of Sensor nodes?   [7]

3   Explain in brief about the Topology of Personal Area Networks?   [15]

4 a) Explain in brief about Five phase Reservation protocol?   [8]
   b) Explain in brief about the Issues in Designing a MAC protocol for Ad Hoc Wireless Networks?   [7]

5 a) Explain in brief about DSDV Routing Protocol?   [8]
   b) List out the advantages and disadvantages of CHGSR protocol?   [7]

6 a) Explain in brief about Ad hoc Transport Protocol?   [8]
   b) Explain in brief about TCP Bus?   [7]

7 a) Explain in brief about Clustering in WSN?   [8]
   b) Explain in brief about Network Security Requirements in WSN?   [7]

8 a) Explain in brief about smart metering Applications?   [8]
   b) Explain in brief about Node level simulators in WSN?   [7]

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1. Define Wireless Sensor Networks? Explain in brief about the Advantages and Disadvantages in Wireless Sensor Networks? [15]

2. a) Explain in brief about Tiny OS and nesC? [8]
   b) Explain in brief about Design Principles of wireless sensor network? [7]

3. Explain in brief about the Topology of Wide Area Networks? [15]

4. a) Explain in brief about Classifications of MAC Protocols? [8]
   b) Explain in brief about Real time MAC Protocol? [7]

5. a) Differentiate between Table –Driven Routing Protocols and On–Demand Routing Protocols? [7]
   b) Explain in brief about the Issues in Designing a Routing Protocol for Ad Hoc Wireless Networks? [8]

6. a) Explain in brief about feedback based TCP? [7]
   b) Explain in brief about TCP with explicit Link failure Notification? [8]

7. a) Explain in brief about Secure Routing in Ad Hoc Wireless Networks? [7]
   b) Explain in brief about Time Synchronization in WSN? [8]

8. List out and Explain in brief about the Applications of wireless sensor networks? [15]

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1   Define Wireless Sensor Networks ? Explain in brief about the Enabling Technologies for Wireless Sensor Networks?   [15]

2   a)   Explain in brief about Requirements for WSN Service Interfaces?   [8]
    b)   Define Gateway? Explain in brief about the need for Gateways?   [7]

3   Explain in brief about the Topology of Mobile Ad hoc Networks?   [15]

4   a)   Explain in brief about the Design goals of a MAC Protocol for Ad Hoc Wireless Networks?   [8]
    b)   Differentiate between Contention - Based Protocols with reservation and Scheduling Mechanisms?   [7]

5   a)   Explain in brief about AODV Routing Protocol?   [8]
    b)   Differentiate between DSR and TORA Routing Protocols?   [7]

6   a)   Explain in brief about the Design Goals of a Transport Layer Protocol for Ad Hoc Wireless Networks?   [8]
    b)   Explain in brief about Secure aware AODV Routing protocol?   [7]

7   a)   Explain in brief about Topology Control in WSN?   [8]
    b)   Explain in brief about Key Management in WSN?   [7]

8   Explain in brief about Wireless Sensor network tools?   [15]

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*****

1   Define wireless Sensor network? Explain in brief about the challenges in designing a wireless Sensor network   [15]

2 a)   Explain in brief about WSN to Internet communication   [8]
   b)   Explain in brief about WSN Tunneling?   [7]

3   Explain in brief about hidden node and exposed node problem?   [15]

4 a)   Explain in brief about Interleaved CSMA Protocol?   [8]
   b)   Explain in brief about Directional MAC Protocols for Ad hoc wireless network?   [7]

5 a)   Explain in brief about Fish eye state Routing protocol?   [8]
   b)   Explain in brief about OLSR Routing protocol   [7]

6 a)   Explain in brief about the Issues in Designing a Transport Layer Protocol for Ad Hoc Wireless Networks?   [8]
   b)   Why does TCP not perform well in Ad hoc wireless network?   [7]

7 a)   Explain in brief about Security in Ad Hoc Wireless Networks?   [8]
   b)   Explain in brief about Sensor Tasking and Control?   [7]

8   Explain in brief about Node level Software platforms in Wireless Sensor Networks?   [15]