Code No: **R42047** **R10** **Set No. 1**

**IV B.Tech II Semester Regular/Supplementary Examinations, April/May - 2016**

# 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**
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| | | | |
|---|---|---|---|
| 1 | a) | How does adhoc network differ from wireless networks? | [8] |
| | b) | Mention the major applications of Wireless Sensor Networks. | [7] |
| 2 | a) | Describe the single node architecture with appropriate diagram. | [8] |
| | b) | Explain energy aware protocols in WSN. | [7] |
| 3 | a) | Discuss the Security issues in MANETs. | [8] |
| | b) | Explain in detail about the different types of MANET routing Algorithms. | [7] |
| 4 | a) | Mention the MAC layer challenges in Wireless Sensor Networks. | [8] |
| | b) | What are the Design goals of a MAC Protocol for Ad Hoc Wireless Networks? | [7] |
| 5 | a) | List the classification of routing protocols in ad hoc networks. Explain any two in detail. | [8] |
| | b) | What are the issues in designing a Routing Protocol for Ad Hoc Wireless Networks? | [7] |
| 6 | a) | What are the design Goals of a Transport Layer Protocol for Ad Hoc Wireless Networks? | [8] |
| | b) | Justify what are the solutions for classification of transport layer. | [7] |
| 7 | a) | Explain how security is provided in adhoc sensor networks. | [8] |
| | b) | Describe the time synchronization in adhoc sensor networks. | [7] |
| 8 | a) | Describe the Berkeley Motes in detail. | [8] |
| | b) | Give the description of future direction of Wireless Sensor Networks. | [7] |

Code No: **R42047** **R10** **Set No. 2**

**IV B.Tech II Semester Regular/Supplementary Examinations, April/May - 2016**

**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**

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| | | | |
|---|---|---|---|
| 1 | a) | What are the deployment challenges in Wireless Sensor Networks? | [8] |
| | b) | List the application areas of sensor networks. | [7] |
| 2 | a) | Discuss about quality of sensor network. | [8] |
| | b) | Draw and explain sensor network architecture. | [7] |
| 3 | a) | Define the problem of Hidden and Exposed terminals. | [8] |
| | b) | What are the different kinds of multiplexing techniques? Explain them. | [7] |
| 4 | a) | Explain the issues in Designing a MAC protocol for Ad Hoc Wireless Networks. | [8] |
| | b) | With relevant examples explain any two MAC layer protocols in Wireless Sensor Networks. | [7] |
| 5 | a) | Why TCP protocols used in wired network is not suitable for wireless networks? Compare the different TCP protocols over ad hoc networks. | [8] |
| | b) | Explain the OLSR protocol in detail. Compare it with AODV protocol. | [7] |
| 6 | a) | Describe the issues in Designing a Transport Layer Protocol for Ad Hoc Wireless Networks. | [8] |
| | b) | What are the challenges in transport layer for Adhoc networks? | [7] |
| 7 | a) | Explain the Clustering in detail. | [8] |
| | b) | What are the requirements in network security? | [7] |
| 8 | a) | Explain the Node level simulators in detail. | [8] |
| | b) | Describe the Wireless Fidelity systems in detail. | [7] |

Code No: **R42047** **R10** **Set No. 3**

**IV B.Tech II Semester Regular/Supplementary Examinations, April/May - 2016**

# 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**

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| | | | |
|---|---|---|---|
| 1 | a) | Differentiate ad hoc networks & sensor networks. Outline the features of Wireless Sensor Networks. | [8] |
| | b) | Compare the features of cellular networks and ad hoc networks. | [7] |
| 2 | a) | Draw and explain the architecture of Sensor Networks. | [8] |
| | b) | Describe in detail about the energy consumption of sensor nodes. | [7] |
| 3 | a) | Explain in detail about Transceiver Design Considerations. | [8] |
| | b) | Explain the properties of MANETs. | [7] |
| 4 | a) | Explain MAC layer challenges in Wireless Sensor Networks. | [8] |
| | b) | Explain the design goals of a MAC Protocol for Ad Hoc Wireless Networks. | [7] |
| 5 | a) | Describe about various types of hybrid routing protocols. | [8] |
| | b) | Explain in detail about the source initiated routing protocols for adhoc networks. | [7] |
| 6 | a) | What is a transport layer? How to Classify Transport Layer Solutions? | [8] |
| | b) | Explain the transport layer protocols in detail. | [7] |
| 7 | a) | Explain about Sensor Tasking and Control. | [8] |
| | b) | Explain in detail about Security in Ad Hoc Wireless Networks. | [7] |
| 8 | a) | Explain the programming challenges in Wireless Sensor Networks. | [8] |
| | b) | Using sensors how to automate a home? Explain it. | [7] |

Code No: **R42047** **R10** **Set No. 4**

**IV B.Tech II Semester Regular/Supplementary Examinations, April/May - 2016**

# 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**

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| | | | |
|---|---|---|---|
| 1 | a) | What are the major issues and challenges that need to be considered for designing adhoc wireless system? | [9] |
| | b) | Describe the Enabling Technologies for Wireless Sensor Networks. | [6] |
| 2 | a) | Explain the optimization goals of Sensor Networks. | [7] |
| | b) | Explain the merits and demerits of Sensor Networks. | [8] |
| 3 | a) | What are the applications needed in a MANET? | [8] |
| | b) | What is mobile ad-hoc network? What are the applications of MANET? | [7] |
| 4 | a) | Discuss about the Contention Based MAC Protocols with Scheduling Mechanisms. | [7] |
| | b) | Explain the any two MAC Protocols that use Directional Antennas. | [8] |
| 5 | a) | Explain the difference between Proactive routing protocols and Reactive routing protocols. | [8] |
| | b) | Explain the OLSR protocol in detail. Compare it with AODV protocol. | [7] |
| 6 | a) | What are the issues designing in transport layer for adhoc networks? | [8] |
| | b) | Describe the classification of transport layer and its solutions. | [7] |
| 7 | a) | What are the issues and Challenges in Security Provisioning? | [8] |
| | b) | Describe the attacks in Network Security. | [7] |
| 8 | a) | Explain the Node- level software in detail. | [8] |
| | b) | Describe in detail about the state centric programming. | [7] |