

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

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

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

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