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**Question Paper Code: 39406**

B.E. / B.Tech. DEGREE EXAMINATION, MAY 2018

Elective

Electronics and Communication Engineering

01UEC906 - WIRELESS SENSOR NETWORKS

(Regulation 2013)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 2 = 20 Marks)

1. Define wireless sensor network.
2. List at least four applications of Wireless sensor Networks.
3. Draw the architecture of a sensor node.
4. Mention various performance metrics of WSN.
5. List the various modes of a sensor node.
6. Differentiate WSN routing and Adhoc routing.
7. Summarize the topology control.
8. Explain how clustering solves the issue of scalability of WSN.
9. List the various services offered by localization.
10. Classify the sensor node hardware.

PART - B (5 x 16 = 80 Marks)

11. (a) With required diagram explain the sensor network architecture and discuss about the design principles. (16)

Or

- (b) Discuss the potential applications of wireless sensor network. (16)

12. (a) Explain the physical and MAC layer protocols defined by IEEE 802.15.4. (16)

Or

- (b) Explain the schedule based protocol (LEACH) with the help of neat diagram. Give its advantages and disadvantages. (16)

13. (a) Explain how to maximize the network life time with respect to available battery energy. (16)

Or

- (b) Explain the data centric routing protocols. (16)

14. (a) Discuss on the Angle of Arrival (AOA) and Time Difference of Arrival (TDOA) based tracking mechanism. (16)

Or

- (b) Discuss about the importance of time synchronization in WSN. Explain the different latencies in a channel, Also estimate the clock phase difference using three message exchanges. (16)

15. (a) Discuss on the sensor network programming challenges. (16)

Or

- (b) Write detailed notes on any one Node-Level software platform. (16)

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