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**Question Paper Code: 39406**

B.E. / B.Tech. DEGREE EXAMINATION, APRIL 2019

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. Bring out the difference between Adhoc networks and wireless sensor networks.
2. What are the enabling technologies for WSN?
3. Give the hardware components in sensor node architecture.
4. State the use of gateways.
5. Differentiate between active and passive sensors.
6. Differentiate WSN routing and Adhoc routing.
7. Discuss on the parameters defined by the homogenous 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) (i) Describe the challenges for designing a wireless sensor networks. (8)  
(ii) Explain the collaborative processing in WSN. (8)

Or

- (b) Brief note on the home control and industrial control applications of WSN. (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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