

Reg. No. :

--	--	--	--	--	--	--	--	--	--

Question Paper Code: 39047

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2017

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. Explain the characteristics of Wireless sensor Networks.
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. 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) With required diagram explain the sensor network architecture and discuss about the design principles. (16)

Or

- (b) Explain the concept of WSN to internet and internet to WSN communication. Also express the need for gateway. (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)