Registration no: | | | | | | | | | | |

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B.Tech
PECS5407

8th Semester Regular / Back Examination 2016-17
WIRELESS SENSOR NETWORKS
BRANCH: BIOMED, ECE, ETC
Time: 3 Hours
Max Marks: 70
Q.CODE: Z232

Answer Question No.1 which is compulsory and any five from the rest.
The figures in the right hand margin indicate marks.

Q1 **Answer the following questions:** **(2 x 10)**

a) Explain the monotone properties of random graph.
b) Differentiate between data centric and address centric routing
c) Define coverage and connectivity in WSN and explain the k- overage metrics?
d) Explain the pros and cons of wireless sensor network if the radio transmission power is increased.
e) Explain the RF propagation model.
f) Explain the different phases of receiver-initiated cycle receiver technique(RICER)
g) Explain the three major tunable parameters for topology control in wireless sensor network.
h) What are the advantages of data centric routing protocols?
i) Explain different goals of MCA protocol in wireless sensor network.
j) Differentiate between S-Mac and T-MAC.

Q2 **a)** What are different uncertainties which exist in both RBS and TPSN protocols? **(2)**
b) Explain different challenges of sensor database. **(8)**

Q3 **a)** Explain why the relay diversity scheme may not work well with some sleep-oriented MAC protocols proposed for sensor networks. **(5)**
b) How phase offset is estimated in reference broadcast synchronization. **(5)**

Q4 **a)** Discuss the working procedure of IEEE802.11 in wireless sensor network. **(5)**
b) How low power listening mode is used to conserve energy in B-MAC protocol. **(5)**

Q5 **a)** Explain how duty cycled approach is used to transit between listen state and sleep state in S-MAC protocol. **(5)**

b) What is the significance of network topology during deployment of sensors? Analyze the functionality and performance of two -tier hierarchical cluster topology in comparison to other topologies **(5)**

Q6 **a)** Discuss the Interrelated guarantees and services that may be needed in wireless sensor networks. **(5)**

b) Define the Relay Region and Enclosure of a node and explain how Minimum Energy Connected Network (MECN) achieves connectivity using this parameter. **(5)**

Q7 Explain different approaches for congestion control in wireless sensor networks. **(10)**

Q8 **Write short answer on any TWO:** **(5 x 2)**

a) Real-time scheduling

b) Leach Protocol

c) Mobile Sink

d) D-MAC Protocol