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T1 EXAMINATION- Feb. 2020

B.Tech. VIII Sem.

COURSE CODE: 15B1WCI831   MAX. MARKS: 15
COURSE NAME: Wireless Sensor Networks: Protocols and Applications
COURSE CREDIT: 03   MAX. TIME: 1 HR.

Note: All questions are compulsory. Carrying of mobile phone during examinations will be treated as case of unfair means.

Q1. (a) What is the role of source and sink in WSN? What are their different interaction patterns?
                                                                         [2]
b) In what way WSNs are different from mobile ad-hoc networks?   [3]

Q-2. (a) What is/are the criterion of selection of multihop wireless communication over single hop and vice versa in WSN? Comment on each.   [2]

(b) Explain the different transceiver operational states of sensor node. On what basis, the transition from active to sleep states in the sensor node should be performed? Support your claim by providing the mathematical formulation.   [3]

Q3. (a) Model the energy consumption of the sensor node in transmission, reception and computation stages. How can you relate the energy consumption in sending data and computing in the sensor node?   [3]

b) Explain the following terms: [2]
    (i) Dynamic voltage scaling in sensor network
    (ii) Categories of sensor nodes