

Roll No.

Total No. of Pages : 02

Total No. of Questions : 08

M.Tech. (CSE) (Sem.-1)

WIRELESS SENSOR NETWORKS

Subject Code : MTCS-106-18

M.Code : 75156

Date of Examination : 17-01-23

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. Attempt any FIVE questions out of EIGHT questions.
2. Each question carries TWELVE marks.

1.
 - a) Discuss the potential applications of wireless sensor networks.
 - b) Explain the cross-layer designs used in wireless sensor networks.
2.
 - a) What are the different types of management planes that are specified in the WSN architecture?
 - b) For a wireless sensor node with 20-mW operation power and 30- μ W standby power, if the duty cycle is 0.1 percent, then evaluate the time-average power drain. If the node is supplied by a 1500 mAh AAA battery, linearly regulated to 1 V, estimate the life time of the node.
3.
 - a) Differentiate between fixed-access and random-access protocol design.
 - b) Explain the importance of synchronization in WSN protocols.
4.
 - a) Explain the classification strategy of MAC protocol in wireless sensor network. Give example of at least one protocol of each group.
 - b) Explain the role of network simulator-3 in the analysis of WSN with an example.
5.
 - a) Explain MANET along with its characteristics, in detail.
 - b) Explain the resource-aware routing protocol.

6.
 - a) Explain static key distribution strategy.
 - b) What are the different attacks that can affect the security of wireless sensor networks?
7. **Explain the following :**
 - a) Data-centric routing protocol.
 - b) Analysis of opportunistic routing by Markov chains.
8. Explain the IEEE 802.11 MAC data format with relevant diagram.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.