Roll No. ☐☐☐☐☐☐☐☐☐☐☐   Total No. of Pages : 02

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M.Tech.(ECE) (2018 & Onwards Batch) (Sem.–1)
WIRELESS SENSOR NETWORKS
Subject Code : MTEC-PE1X-18-1
M.Code : 75174
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) What is a Wireless Sensor Network? Draw the architecture of WSN.

    b) What are the metrics of MAC protocol? Explain the algorithm for TDMA MAC.

2. a) Explain low-rate WPAN protocol.

    b) What are the challenges and the required mechanisms of a Wireless Sensor network?

3. a) Explain the 6L0WPAN protocol.

    b) Describe a WSN application for each of the following categories: time-driven, event-driven, and query-driven with suitable examples in detail.

4. a) Explain time synchronization mechanisms in WSN.

    b) Explain Range-Based localization and Range Free localization methodology in WSN with suitable applications.

5. Explain in detail the properties and characteristics of the data dissemination protocol. What are the challenges that occur while installing the WSN in real-time application?

6. a) Compare BLE and Bluetooth technologies.

    b) What are the various Routing Metrics and Routing protocols in WSN? Explain one of them in detail.

7. a) Briefly explain the sensor network programming challenges.

b) What are the Transport layer protocol design issues for Ad hoc wireless networks? Explain in detail.

8. How is wireless sensor network used for precision agriculture applications? Describe it with a neat diagram.