Fifth Semester B.E. Degree Examination, Dec.2019/Jan.2020
Sensors and Networks

Time: 3 hrs.   Max. Marks:100

Note: *Answer any FIVE full questions, selecting*
at least TWO full questions from each part.

PART – A

1   a. What is sensor? List and explain sensor performance characteristics.   **(10 Marks)**
    b. What are the guidelines offered to select and install measurement systems for the best possible accuracy?   **(10 Marks)**

2   a. With neat block diagram, explain smart sensor.   **(10 Marks)**
    b. Discuss present trend in sensor technology and IC sensors.   **(10 Marks)**

3   a. Discuss different types of architecture used in wireless sensor network.   **(10 Marks)**
    b. Explain wireless instrument architecture.   **(10 Marks)**

4   a. Explain processor subsystem employed in computer architectures such as Von Neumann, Harvard and Super-Harvard architecture.   **(l0 Marks)**
    b. Compare Serial Peripheral Interface and Inter-Integrated Circuit (I^2C).   **(10 Marks)**

PART – B

5   a. Explain OSI model with a neat diagram.   **(10 Marks)**
    b. Explain IEEE 802 network model with a neat diagram.   **(10 Marks)**

6   a. Explain the design guidelines and challenges of broadcasting, multicasting and geocasting mechanisms in WSNs.   **(10 Marks)**
    b. With neat diagram, explain multicasting mechanisms for Two-Tier Data Dissemination (TTDD) that provides location-based multicasting mechanisms.   **(10 Marks)**

7   a. Discuss different congestion control protocols used in transport layer for wireless sensor networks.   **(10 Marks)**
    b. List the different reliable transport protocols for wireless sensor networks.   **(10 Marks)**

8   a. Explain network topologies supported by the IEEE 802.15.4 MAC layer.   **(10 Marks)**
    b. Explain ZigBee functional layer architecture and protocol stack.   **(10 Marks)**

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