U.S.N ⬚⬚⬚⬚⬚⬚⬚⬚⬚⬚

P.E.S. College of Engineering, Mandya - 571 401
(An Autonomous Institution affiliated to VTU, Belgaum)
Seventh Semester, B.E. - Computer Science and Engineering
Semester End Examination; Dec - 2016/Jan - 2017
Wireless Sensor Network

Time: 3 hrs   *Max. Marks: 100*

Note: Answer **FIVE** full questions, selecting **ONE** full question from each unit.

UNIT - I

1 a.	What are the major challenges wireless sensor networks are facing? Explain in detail.	10
b.	Describe the single node architecture with appropriate diagram.	10
2 a.	Explain in detail the communication device module of a wireless node.	10
b.	Explain in brief applications of wireless sensor networks.	4
c.	List and explain the principle differences between MANET and WSN.	6

UNIT - II

3 a.	Explain in detail the design principles for WSNs.	10
b.	List and explain the most crucial points influencing physical layer design in WSNs.	10
4 a.	Discuss in detail how communication is established between WSN and Internet?	10
b.	Explain the basic wave propogation phenomena.	10

UNIT - III

5 a.	List and explain the design constraints for wireless MAC protocols.	10
b.	Explain in detail the error control on wireless link.	10
6 a.	Explain any one contention-based and schedule-based protocol	12
b.	Explain link management of link-layer protocol.	8

UNIT - IV

7 a.	What is geographic routing? Explain in detail.	10
b.	Define data aggregation. Explain in detail.	10
8 a.	Write and explain any one algorithm for finding minimum spanning tree.	10
b.	Explain in detail gossiping and agent based unicast forwarding.	10

UNIT - V

9 a.	Define localization. Explain the different approaches to determine a node's position.	10
b.	Define Topology control. Explain in detail.	10
10 a.	Explain in detail single-hop localization.	10
b.	Write a note on : i) Relative neighborhood graph ii) Spanning-tree based construction.	10

∗ ∗ ∗