



--	--	--	--	--	--	--	--	--	--

P.E.S. College of Engineering, Mandya - 571 401
(An Autonomous Institution affiliated to VTU, Belgaum)
Eighth Semester, B.E. – Computer Science and Engineering
Semester End Examination; June/July – 2015
Wireless Sensor 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. | Explain in detail characteristic requirements in WSN. | 10 |
| | b. Which are the mechanisms required to form WSN | 10 |
| 2. a. | With a diagram, explain hardware components in a sensor node. | 6 |
| | b. Explain characteristics of transceiver (any eight) | 8 |
| | c. Explain event based programming model for WSN. | 6 |
| 3. a. | Explain different forms of mobility of WSN. | 8 |
| | b. Explain Scalability of WSN. | 4 |
| | c. Explain Internet to WSN communication. | 8 |
| 4. a. | Explain the following : (i) Dynamic modulation scaling (ii) Antenna considerations | 10 |
| | b. Write a neat diagram and explain S-MAC protocol. | 10 |

PART – B

- | | | |
|-------|---|----|
| 5. a. | Explain mediation device protocol with relevant diagrams. | 10 |
| | b. Explain distributed assignment of network wide address. | 10 |
| 6. a. | Explain the need of time synchronization in WSN. | 5 |
| | b. Explain important performance metrics of synchronization algorithm. | 5 |
| | c. Explain the properties of localization and positioning procedures of nodes in WSN. | 10 |
| 7. a. | Explain MICA mote architecture with relevant diagrams. | 10 |
| | b. Explain programming challenges in sensor networks. | 10 |
| 8. a. | Write implementation module for timer component in nesc. | 10 |
| | b. Explain the components of node level simulator. | 10 |