

**FACULTY OF ENGINEERING****B.E. 4/4 (ECE) II - Semester (Main & Backlog) Examination, May / June 2019****Subject : Wireless Sensor Networks (Elective – IV)****Time : 3 Hours****Max. Marks: 75****Note: Answer all questions from Part-A & any five questions from Part-B.****PART – A (25 Marks)**

- 1 What are different types of sensors used? Illustrate with some examples. (3)
- 2 What is figure of merit? What is functionality of Gateway node in WSN? (3)
- 3 Explain about important classes of MAC Protocols. (3)
- 4 What are different challenges in sensor network programming? (3)
- 5 What are different security issues in WSN? (3)
- 6 Write differences between mobile Ad-hoc & Sensor Networks. (2)
- 7 What is function of controller and power supply section in sensor node architecture? (2)
- 8 What are design issues of a routing protocol of WSNs? (2)
- 9 Explain localization of sensor nodes in WSNs. (2)
- 10 How different layers of WSNs attacked and what are their countermeasures? (2)

**PART- B (50 Marks)**

- 11 (a) Explain applications of sensor networks in real time scenario. (5)  
(b) What are challenges faced to design WSNs? (5)
- 12 (a) Explain about sensor node architecture. (5)  
(b) What are optimization goals in any sensor network? (5)
- 13 (a) Discuss in detail about IEEE 802.15.4 MAC Layer Requirements. (5)  
(b) Explain how MAC Address assignment is done in sensor networks. (5)
- 14 Explain the following architectures (10)  
(a) MICA MOTE  
(b) Tiny OS
- 15 Explain in detail about various security protocols for WSNs and how are they implemented? (10)
- 16 (a) What do you mean by state centric programming and explain its significance over generic distributed systems. (5)  
(b) Discuss range assignment problem in topology control. (5)
- 17 (a) Explain various routing protocols with respect to energy efficient routing. (5)  
(b) What are differences between Zigbee and Bluetooth Technology? (5)

\*\*\*\*\*