Roll No. | | | | | | | | | | | | |

Total No. of Pages : 01

Total No. of Questions : 08

M.Tech.(IT) (E3)(2015 & Onwards) (Sem.–3)

WIRELESS SENSOR NETWORKS

Subject Code : MTIT-302

Paper ID : [74153]

Time : 3 Hrs. Max. Marks : 100

INSTRUCTION TO CANDIDATES :

1. Attempt any FIVE questions out of EIGHT questions.
2. Each question carries TWENTY marks.

I a. Write down the different types of applications where wireless sensors can be used. Also list various characteristic requirements of sensors. (10)

b. Differentiate among Wireless sensor networks and Mobile ad-hoc networks. (10)

II Explain briefly : (20)

a. Temperature and Pressure Sensors

b. Humidity Sensors

c. Optical Sensors

III a. Compare single hop versus multiple hop networks with suitable example. (10)

b. Explain the basic principles for design and optimizing the wireless sensor networks. (10)

IV a. Discuss the various design issues for designing of physical layer and transceivers of Wireless sensor networks. (10)

b. Describe the three different classes of MAC protocol in detail. (10)

V a. How S-MAC protocol avoids idle listening, collisions, and overhearing? Also explain S-MAC fragmentation and NAV setting. (10)

b. Discuss the address allocation and assignment mechanism of WSNs with suitable example. (10)

VI a. How to judge the efficacy and quality of a topology-control algorithm? (10)

b. Describe the node clustering algorithm for wireless sensor networks. (10)

VII Discuss the various challenges faced in node localization and positioning of sensors in WSNs. (20)

VIII Write a note on : (20)

a. Berkeley Motes

b. State centric programming