

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY
MCA - SEMESTER- V EXAMINATION – WINTER 2016

Subject Code: 2650007

Date: 24 / 11 / 2016

Subject Name: Wireless Sensor Network

Time: 10.30 am to 01.00 pm

Total Marks: 70

Instructions:

- 1. Attempt all questions.**
- 2. Make suitable assumptions wherever necessary.**
- 3. Figures to the right indicate full marks.**

Q. 1 [A] Defined the Following questions [07]
(i) Define : WSN (ii) Null Spot
(iii) Reflection (iv) ZigBee
(v) What is used of 802.11? (vi) Microscopic
(vii) Single hop vs. Multi hop

Q. 1 [B] (i) Difference between Traditional Network vs. Wireless Sensor Network [03]
(ii) Write short notes on Background of Wireless Sensor Network Technology. [04]

Q. 2 [A] Explain Range of application for Wireless Sensor Network. Give at least four [07]
applications for Category 1 application of Wireless Sensor network.

Q. 2 [B] List down all the Network Layer Protocol for wireless sensor network. Explain [07]
FLOODING and LEACH in details.

OR

Q. 2 [B] Explain Hardware and Software need of WSN with proper figure and all basic [07]
Hardware Subsystem in details.

Q. 3 [A] Explain Wireless Sensor Network Taxonomy and Trends in Details. [07]

Q. 3 [B] List down all the wireless technologies. Explain WLAN and 3GPP in details. [07]

OR

Q. 3 [A] Explain MIDDLEWARE Architecture and principles for Wireless Sensor [07]
Networks.

Q. 3 [B] Explain SPIN protocol in detail. Also explain SPIN-PP and SPIN-BC. [07]

Q. 4 [A] List down all the Medium Access Control Protocol for wireless sensor Network. Explain any three in detail. [07]

Q. 4 [B] List down all the existing Middleware. Explain Impala, MSM, DSS, Em and Sensor Ware in detail. [07]

OR

Q. 4 [A] Explain WSN Design Issues for MAC protocols, Routing protocols and Transport protocols in detail. [07]

Q. 4 [B] What are the design issues with WSN operating systems? List different Operating systems available for WSN. Explain any one of them. [07]

Q. 5 [A] List all the Operating Systems used with WSNs [07]
(i) Explain Tiny OS (ii) Explain MANTIS.
(iii) Explain SenOS. (iv) Explain EYES OS

Q. 5 [B] Explain Performance Modeling of WSNs by taking proper performance metrics and basic models. [07]

OR

Q. 5 [A] List all the Transport Controls Protocol used with WSNs. [07]
Explain CODA Explain ESRT
Explain RMST. Explain GARUDA.

Q. 5 [B] What are the design issues with network management? Taking example of MANNA, explain network management architecture. [07]
