

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY
MCA - SEMESTER– V EXAMINATION – WINTER 2018

Subject Code: 2650007

Date: 26/11/ 2018

Subject Name: Wireless Sensor Network

Time: 10.30 AM TO 01.00 PM

Total Marks: 70

Instructions:

1. Attempt all Q.stions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

Q. 1 [A] Defined the Following Q.stions **[07]**
(i) Full Form of : WLAN (ii) Define : WSN
(iii) Full Form of : DSSS (iv) ZigBee
(v) What is used of 802.11? (vi) Null Spot
(vii) Nanoscopic Scale

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

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

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

OR

Q. 2 [B] Explain Sensor Network Architecture Elements. List down the functionality for each of the elements. **[07]**

Q. 3 [A] List down all the Medium Access Control Protocol for wireless sensor Network. Explain any three in detail. **[07]**

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

OR

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

Q. 3 [B] List down all the existing Middleware. Explain Impala, MSM, DSS, Em and Sensor Ware in detail. **[07]**

Q. 4 [A] List all the Operating Systems used with WSNs **[07]**
(i) Explain EYES OS (ii) Explain SenOS.
(iii) Explain MANTIS. (iv) Explain Tiny OS

Q. 4 [B] Explain Performance Modeling of WSNs by taking proper performance metrics and basic models. **[07]**

OR

Q. 4 [A] What are the design issues with network management? Taking example of MANNA, explain network management architecture. **[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] Explain WSN Design Issues for MAC protocols, Routing protocols and Transport protocols in detail. **[07]**

Q. 5 [B] Explain SPIN protocol in detail. Also explain SPIN-PP and SPIN-BC. **[07]**

OR

Q. 5 [A] List down all the wireless technologies. Explain WLAN and 3GPP in details. **[07]**

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