

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**ME SEMESTER II EXAMINATION – SUMMER 2017**

**Subject Code: 2722711****Date: 25/05 /2017****Subject Name: Wireless Ad-Hoc and Sensor Networks****Time: 02:30 PM to 05:00 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) What is MANET (Mobile Ad-Hoc Network)? Explain Applications and Challenges of MANET. **07**
- (b) Explain the components of IEEE 802.11 (Wireless LAN) Network and write the IEEE 802.11 standards. **07**
- Q.2** (a) What is the difference between Topology-Based and Position-Based Approaches of Routing? Explain any one Topology-Based Routing Protocol in Detail. **07**
- (b) Which are the Security Issues in Wireless PAN? Draw and Explain the Bluetooth Security Architecture. **07**
- OR**
- (b) Classify the Multicast Routing approaches in MANET. Explain the Issues in Providing Multicast in MANET. **07**
- Q.3** (a) Explain Voronoi Diagram based Geocasting (VDG) Protocol. **07**
- (b) Explain Spectrum Access Models for Cognitive Radio. **07**
- OR**
- Q.3** (a) Discuss the Issues in Designing MAC Protocol in Mobile Ad-Hoc Network (MANET). **07**
- (b) Explain DSDV (Destination Sequence Distance Vector) Routing Protocol in detail. **07**
- Q.4** (a) List and Discuss the Issues and Challenges in designing Wireless Sensor Network (WSN). **07**
- (b) Draw Hardware and Software Components of Wireless Sensor Node and explain its each component in brief. **07**
- OR**
- Q.4** (a) List Various Applications of Wireless Sensor Network and explain any two applications in detail. **07**
- (b) List the various available Wireless Technologies for Wireless Sensor Networks and explain each in brief. **07**
- Q.5** (a) Explain Low-Energy Adaptive Clustering Hierarchy (LEACH) Protocol in Wireless Sensor Networks. **07**
- (b) Draw the Heterogeneous Network Architecture and explain its Ingredients. **07**
- OR**
- Q.5** (a) Write short note on “Security Issues in Wireless Ad-Hoc and Sensor Networks” **07**
- (b) Explain IEEE 802.15.4 LR-WPANs STANDARD with its Physical Layer and MAC Layer in detail. **07**

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