Reg. No. : | | | | | | | | | | | | |

Question Paper Code : 40456

B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2021.

Seventh Semester

Electronics and Communication Engineering

EC 8702 – AD HOC AND WIRELESS SENSOR NETWORKS

(Regulations 2017)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Outline the hidden vs. exposed terminal problem in ad hoc networks.

2. State any two applications of ad hoc networks.

3. Name the basic components of a sensor node.

4. State any two applications of wireless sensor networks.

5. What is data dissemination in a wireless sensor network?

6. Why wireless sensor networks need localization protocols?

7. What is security provisioning?

8. Define a black hole attack.

9. Present an outline of berkeley motes.

10. Name any two node-level simulators for wireless sensor networks.

PART B — (5 × 13 = 65 marks)

11. (a) What is a routing protocol? Outline the issues in designing a routing protocol for ad hoc wireless networks. (13)

Or

(b) Classify routing protocols for ad hoc wireless networks and present an outline of the same. (13)

12. (a) What is a wireless sensor network? Elaborate the wireless sensor network architecture with a diagram. (13)

Or

(b) Present an elaborate note on the energy consumption rate for sensors in a wireless sensor network. (13)

13. (a) Outline the low energy adaptive clustering hierarchy (LEACH) protocol for wireless sensor networks. (13)

Or

(b) What is energy efficient routing? Present an outline of energy efficient routing in wireless sensor networks. (13)

14. (a) Outline the issues and challenges in security provisioning for wireless sensor networks.

Or

(b) Present an outline of SPINS, security protocol for sensor networks. (13)

15. (a) Outline the features of node-level simulators for wireless sensor networks. (13)

Or

(b) Outline the features of TinyOS and CONTIKI OS for wireless sensor networks. (13)

PART C — (1 × 15 = 15 marks)

16. (a) Present an ad hoc network design that can be used in a geographic location affected by cyclone. State the functional requirements you are considering. (15)

Or

(b) Present a wireless sensor network design that can be used for surveillance and environment monitoring in a zoo. A zoo is a facility in which animals are confined within enclosures, displayed to the public, and in which they may also be bred. State the functional requirements you are considering. (15)

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