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

Question Paper Code : 50502

B.E/B.Tech DEGREE EXAMINATIONS, APRIL/MAY 2023.

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. Define an ad hoc network.
2. What do you mean by routing table?
3. Name the components of a sensor node.
4. Why energy consumption is one of the important sensor network design consideration?
5. Outline the basic idea of low duty cycle medium access control protocols for wireless sensor networks.
6. How a contention based medium access control protocol for a wireless sensor network work?
7. Define security provisioning.
8. What is a flooding attack?
9. Present an outline of Berkeley Mote.
10. Write a note on TinyOS.

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) Outline the steps in the Ad hoc on-demand distance vector routing protocol. (13)

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

Or

(b) Outline any three applications of wireless sensor networks. (13)

13. (a) Outline the Power Aware Multi–Access (PAMAS) protocol for wireless sensor networks (13)

Or

(b) Outline the issues in designing a transport layer protocol for wireless sensor networks. (13)

14. (a) Outline the layer wise attacks in wireless sensor networks. (13)

Or

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

15. (a) Elaborate the usage of CONTIKI OS for wireless sensor networks. (13)

Or

(b) Outline the features of NS2 simulator and its extension to wireless sensor networks. (13)

PART C — ($1 \times 15 = 15$ marks)

16. (a) Analyse an ad hoc network design that can be used in a geographic location affected by heavy rain. (15)

Or

(b) Elaborate on wireless sensor network design that can be used for monitoring the movement of animals in a forest. (15)

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