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Question Paper Code : 70524

B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 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. What is the use of adhoc networks?
2. Mention the advantages of DSDV.
3. What are challenges associated with sensor network database?
4. Define in-network processing.
5. List out the merits of leach MAC protocol.
6. What is on-demand routing protocol?
7. Give the significance of quality of service.
8. What is meant by black hole attack?
9. Write five main components of a basic sensor node.
10. What is nesC?

PART B — (5 × 13 = 65 marks)

11. (a) (i) Compare and contrast cellular network with an ad hoc network. (8)
(ii) State the merits of an ad hoc wireless Internet. (5)

Or

- (b) Illustrate the route establishment procedure in AODV with an example.

12. (a) Describe in detail about the energy consumption of sensor nodes.

Or

(b) Explain about the functions and features of a sensor node's transceiver in a wireless sensor network. (6+7)

13. (a) Illustrate the working of the Mediation device protocols with necessary diagrams in wireless sensor networks.

Or

(b) Discuss about IEEE 802.15.4 protocol in detail.

14. (a) Describe in detail about the reliability requirement in Sensor Network.

Or

(b) Determine the impact of the following security threats in WSN :

(i) Black hole attack (7)

(ii) Wormhole attack (6)

15. (a) (i) Write short notes on Berkeley Motes. (7)

(ii) Illustrate the programming challenges faced while implementing applications in WSN. (6)

Or

(b) Analyze the features of the node level simulator ns-2.

PART C — (1 × 15 = 15 marks)

16. (a) Demonstrate the classic embedded system programming interface and describe the features of sensor network programming with its difficulties. (7+8)

Or

(b) Analyze the importance of power aware multi-access protocol for defining WSN MAC and illustrate the working model of power aware multi-access signaling protocol. (8+7)