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Question Paper Code: 22041

M.E. DEGREE EXAMINATION, MAY 2014.

Second Semester

Computer Science and Engineering (with Specialization in Networks)

01PNE202 - SENSOR AND AD-HOC NETWORKS

(Regulation 2013)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions.

PART A - (10 x 2 = 20 Marks)

1. How does CSMA/CA solve hidden terminal problem?
2. Name any four synchronous MAC protocols for Ad Hoc Wireless Networks.
3. Name four table driven proactive routing protocols.
4. State the demerits of TCP-ELFN protocol.
5. State the unique characteristics of wireless sensor network.
6. State four differences between Mobile Ad-Hoc Networks and Sensor Networks.
7. State the goal and components of S-MAC protocol.
8. Briefly explain convex perimeter routing.
9. State the advantages of mesh networks.
10. Briefly explain Mesh Networks Auto Configuration Scheme.

PART - B (5 x 14 = 70 Marks)

11. (a) Compare the merits and demerits of reservation-based MAC protocols and contention-based MAC protocols.

(14)

Or

- (b) Explain the functions of distributed wireless ordering MAC protocol and distributed laxity-based priority scheduling scheme for Ad-Hoc networks and their merits and demerits. (14)
12. (a) Explain the characteristics of an ideal routing protocol for ad hoc wireless networks and explain how ad hoc routing protocols are classified. (14)

Or

- (b) Explain the functions of Ad Hoc TCP (ATCP) protocol with the state transition diagram and its advantages and disadvantages. (14)
13. (a) Explain in detail about the applications of sensor networks. (14)

Or

- (b) Explain the functions of Hybrid TDMA/FDMA and CSMA based WSN MAC protocols. (14)
14. (a) Explain functions of OLSR WSN routing protocol with an example. (14)

Or

- (b) Explain in detail about the challenges in providing Quality of Service (QoS) support in Wireless Sensor Networks. (14)
15. (a) Explain the functions of Hybrid Wireless Mesh Protocol with its architectural diagram. (14)

Or

- (b) Explain in detail about the applications of Vehicular Mesh Networks. (14)

PART - C (1 x 10 = 10 Marks)

16. (a) Give application scenarios where contention-based, reservation-based and packet scheduling-based MAC protocols can be used. (10)

Or

- (b) Discuss the differences in topology reorganization in DSDV and CGSR routing protocols. (10)