

No. of Pages:1

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APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
THIRD SEMESTER M.TECH DEGREE EXAMINATION, DECEMBER 2017

Computer Science and Engineering
(Computer Science and Engineering, Information Security)
01CS7157 : Ad-hoc and Sensor Networks (Elective IV)

Answer any two full questions from each part
Limit answers to the required points.

Max Marks.: 60

Duration: 3 hours

PART A

1. a. Which modulation mechanism is better, amplitude modulation or frequency modulation? Give reasons to support your answer. 4
- b. Discuss the concept of data gathering in ad-hoc sensor networks. 5
2. a. Explain rumor routing. In the implementation of rumor routing, an agent has the table shown in Table 1, and arrives at node A with Table 2 from node B. What will be the status of the tables after updating. 5

Table 1. Agent table

Event	Distance
E1	4
E2	2

Table 2. Node table

Event	Distance	Direction
E1	3	D
E2	3	C
E3	3	D

- b. Explain the architecture of cellular networks. 4
3. a. Draw and explain the protocol stack of blue-tooth standard. 5
- b. Explain energy and detection advantage of sensor network over traditional centralized approach? 4

PART B

4. a. What are the issues in designing MAC protocols. 4
- b. With the help of an example topology explain how faster convergence is achieved in DSDV. 5
5. a. Differentiate between Contention-based protocols with reservation mechanisms and Contention-based protocols with scheduling mechanisms. 5
- b. Explain the flow of control packets in the route maintenance of DSR protocol. 4
6. a. Explain the frame structure of Distributed Packet Reservation Multiple Access Protocol. 4
- b. Compare and contrast destination sequenced distance vector routing and dynamic source routing. 5

PART C

7. a. Discuss major issues and challenges in providing QoS in Ad-hoc wireless networks. 6
- b. Explain battery aware mac protocol. 6
8. a. Explain the need of energy management schemes in ad-hoc networks. 6

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|----|----|---|---|
| | b. | What are the limitations of the IEEE 802.11 MAC protocol that prevent it from supporting QoS traffic? | 6 |
| 9. | a. | What are the requirements of a Secure Routing Protocol for Ad Hoc Wireless Networks? | 6 |
| | b. | Explain coarse feedback scheme in INORA QoS framework. | 6 |

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