USN | | | | | | | | | | |

10CS/IS841

Eighth Semester B.E. Degree Examination, Jan./Feb. 2023
Adhoc Networks

Time: 3 hrs. Max. Marks:100

Note: ***Answer any FIVE full questions, selecting at least TWO questions from each part.***

PART – A

1 a. Define AdHoc wireless networks? List and explain different applications of AdHoc wireless network. **(10 Marks)**

b. Explain Hybrid wireless networks with the help of a schematic diagram. **(05 Marks)**

c. Discuss any five major issues in designing multicast routing protocols for AdHoc Wireless network. **(05 Marks)**

2 a. Mention the classification of MAC protocols. **(05 Marks)**

b. Mention the design goals of MAC protocol for AdHoc Networks. **(05 Marks)**

c. Explain HRMA (Hop Reservation Multiple Access) protocol in detail. **(10 Marks)**

3 a. Describe the working mechanism of multi-channel MAC(MMAC) protocol. **(08 Marks)**

b. Explain :
(i) Distributed priority scheduling MAC protocol.
(ii) Distributed wireless ordering MAC protocol.
(iii) MAC protocol using Directional Antennas.
(iv) Receiver-Based Autorate protocol. **(12 Marks)**

4 a. With a neat diagram, explain Hidden and Exposed terminal problems in wireless networks. **(08 Marks)**

b. How can you classify AdHoc wireless network routing protocols based on the routing information update mechanisms? **(06 Marks)**

c. Explain (STAR) Source-Tree Adaptive Routing protocol with its advantages and disadvantages. **(06 Marks)**

PART – B

5 a. Explain any two Hierarchical Routing Protocols. **(10 Marks)**

b. Explain the metrics of Power-aware routing that contributes to the efficient network. **(10 Marks)**

6 a. Give the design goals of a Transport Layer protocol for AdHoc wireless networks. **(10 Marks)**

b. Compare the various issues handled in the TCP extensions for AdHoc wireless networks. **(10 Marks)**

7 a. Write a note on Network Layer Attacks. **(08 Marks)**

b. What do you mean by key management? Define symmetric key algorithm with substitution and transposition. **(12 Marks)**

8 a. Explain the issues and challenges in providing QoS in AdHoc wireless networks. **(10 Marks)**

b. Explain :
(i) Cluster TDMA protocol for MAC layer QoS.
(ii) Ticket-based QoS routing protocol QoS. **(10 Marks)**

* * * * *