

## Question Bank

### UNIT I - PART A

- 1.1. What is an adhoc network?
- 1.2. What is fading? List the different types of fading?
- 1.3. Why ad hoc networks are needed? (May/June 2012)
- 1.4. What are the challenging issues in ad hoc network maintenance? ( May /June 2013)
- 1.5. What is hidden terminal problem?
- 1.6. Distinguish between shadowing and reflection of signal propagation.
- 1.7. List the transmission impediments of wireless channel ( May / June 2013)
- 1.8. State Shannon's theorem. ( Nov. / Dec. 2012)
- 1.9. Differentiate an ad hoc network and a cellular network with respect to bandwidth usage and cost effectiveness ( Nov./ Dec.2012)
- 1.10. List the applications of ad hoc network.
- 1.11. Define path loss.
- 1.12. Write the equation for maximum data rate according to shanon's theorem ( May/ June 2013)
- 1.13. Give the difference between cellular networks and ad hoc wireless networks.
- 1.14. List the issues that affect the design deployment and performance of ad hoc wireless system.
- 1.15. How scalability improved in ad hoc wireless network.
- 1.16. List the benefits when deployment of a commercial ad hoc wireless networks compared to wired network.
- 1.17. List the propagation mechanism experienced by radio wave.
- 1.18. List the characteristics of wireless channel.
- 1.19. Define Nyquist theorem.
- 1.20. Define Doppler shift.
- 1.21. List the advantages of hybrid wireless networks.

### UNIT I - PART B

- 1.22. What are the characteristics and features of ad hoc networks? (May/June 2012)
- 1.23. Explain path loss and fading in detail. (May/June 2013)
- 1.24. Explain the two main forms of interference, Doppler shift and Nyquist theorem. (May/June 2013)
- 1.24. Explain the applications areas of ad hoc networks. (May/June 2013)
- 1.25. Explain the characteristics of wireless channels. (May/June 2012)
- 1.26. Explain ad hoc indoor mobility models in detail. (May/June 2012)
- 1.27. How mobility can be supported in today's internet? Explain using the WAP model. Comment on its challenges in maintaining ad hoc networks that are connect to internet. ( Nov./ Dec.2012)

## UNIT II - PART A

- 2.1. List the design goals of MAC protocol for ad-hoc networks.
- 2.2. List the issues of designing a MAC protocol for ad hoc networks.
- 2.3. What are the classifications of MAC protocol ( May/ June 2012)
- 2.4. What are the effects of exposed terminal problem in wireless networks?
- 2.5. What are the advantages of directional antennas of MMAC over MACAW?
- 2.6. What are the mechanisms used in MAC layer?
- 2.7. What are the differences between HRMA and SRMA?
- 2.8. List the five phases of FFRP.
- 2.9. List any two needs of real-time MAC protocol.
- 2.10. Compare the efficiency of the packet queuing mechanism adopted in MACA and MACAW (Nov. / Dec. 2012)
- 2.11. List the features of 802.15 standard ( May/ June 2012)
- 2.12. How is directional antenna MMAC superior over MACAW?
- 2.13. Write the frame format of 802.11a.
- 2.14. What is HIPERACCESS?
- 2.15. What do you mean by contention based protocols?
- 2.16. Give the classification of contention based protocol.
- 2.17. Give the classifications of MAC protocols.
- 2.18. List the main issues in designing a MAC protocol for ad hoc wireless networks.
- 2.19. What do you mean by FAMA?
- 2.20. What do you mean by contention based protocols with reservation mechanism?
- 2.21. What do you mean by contention based protocols with scheduling mechanism?
- 2.22. What do you mean by D- PRMA?
- 2.23. What are the disadvantages of the binary exponential back off mechanism used in MACA? How are they overcome in MACAW?
- 2.24. What do you mean by BTMA?
- 2.25. On what basis MACAW protocol is designed?

## UNIT II - PART B

- 2.26. Explain MACAW protocol in detail.
- 2.27. Explain the contention based protocols with scheduling and reservation in detail. ( May/ June 2012)
- 2.28. Explain the HIPERLAN standards in detail. ( May/ June 2012)
- 2.29. Explain 802.11g IEEE standard in detail. ( May/ June 2012)
- 2.30. List and explain the issues in designing a MAC protocol for ad hoc wireless networks.
- 2.31. How are directional antennas superior to MACAW? Explain with an example.
- 2.32. List the important goals of designing a MAC protocol for ad hoc wireless networks. ( May/ June 2013)
- 2.33. Illustrate various steps involved in five phase reservation protocol with its frame format. (Nov./Dec 2012)
- 2.34. How is scheduling mechanism achieved in distributed wireless ordering protocol? Explain in detail. How are information symmetry and perceived collisions handled? ( Nov./ Dec. 2012)



### UNIT III - PART A

- 3.1. What are the responsibilities of routing protocol?
- 3.2. What are the major challenges in designing routing protocols?
- 3.3. Differentiate proactive and reactive protocols. Write examples for each. ( May/ June 2012)
- 3.4. List the characteristics of a routing protocol for ad hoc wireless networks.
- 3.5. What is the approach used to find link stability in ABR ?
- 3.6. List the major classification of routing protocol for ad hoc wireless network.
- 3.7. Based on routing information update mechanism how the routing protocols are classified?
- 3.8. How does energy aware routing work? ( May/ June 2012)
- 3.9. List the classification of routing protocols based on the routing information update mechanism.
- 3.10. List the approaches for power aware routing protocol.
- 3.11. Based on the use of temporal information for routing, how the routing protocols are classified?
- 3.12. Based on the routing topology how the routing protocols are classified?
- 3.13. What is the need for power management in ad hoc network?
- 3.14. List some examples of table driven routing protocols.
- 3.15. List the advantages and disadvantages of DSDV routing protocols.
- 3.16. What is hybrid routing protocol?
- 3.17. Mobility of nodes in a sparsely populated mobile ad hoc network is less. What is the choice between proactive routing protocol and reactive routing protocol?
- 3.18. List the types of on-demand routing protocols.
- 3.19. List the types of hybrid routing protocols.
- 3.20. How on-demand routing protocols differ from on-demand routing protocols?
- 3.21. What are the advantages and disadvantages of dynamic source routing protocol?(DSRP)
- 3.22. What are the pros and cons of tree based and mesh based routing?
- 3.23. What is call routing?
- 3.24. Mention any four qualities of service metrics that are used to evaluate the performance of the network?
- 3.25. Where is network layer solution used for quality of service?
- 3.26. Is hop - length always the best metric for choosing paths in MANETs? Defend your answer. ( Nov. /Dec. 2012)
- 3.27. State any four reasons that lead to the quick power drain of nodes in mobile ad hoc network.
- 3.28. AMRIS may exhibit high packet delivery ratio even when all nodes restrict their mobility to a small region. Why? ( Nov./ Dec. 2012)
- 3.29. Give the difference between Ad hoc on demand Distance vector routing protocol(AODV) and dynamic sequence routing protocol (DSR)

### UNIT III - PART B

- 3.30. With suitable trace, explain the route establishment in location aided routing. ( Nov./Dec2012)
- 3.31. Devise a pseudo code that present various steps involved in neighbor Degree- Based preferred link algorithm. ( Nov./Dec2012)
- 3.32. How is routing table constructed in fisheye state routing protocol? Explain in detail. (Nov./Dec2012)
- 3.33. Discuss table driven protocols with examples.
- 3.34. Explain multicast routing algorithms in detail. ( May/June 2012)
- 3.35. How routing table is constructed in fisheye state routing protocol? Explain in detail. ( Nov./Dec2012)
- 3.36. List the characteristics of ideal routing protocol for ad hoc wireless network. ( May /June 2013)
- 3.37. Classify and explain adhoc wireless network based on routing topology. ( May /June 2013)
- 3.38. Explain the types of ad hoc network routing protocols based on routing information update mechanism. ( May /June 2013)
- 3.39. Explain on demand routing protocol in detail. ( May /June 2012)
- 3.40. Explain the major challenges that a routing protocol designed for adhoc wireless networks face.

### UNIT IV - PART A

- 4.1. List the types of attacks in ad hoc wireless networks.
- 4.2. What do you mean by passive attacks?
- 4.3. What do you mean by active attacks?
- 4.4. Define Denial of attack.
- 4.5. List the major types of resource consumption attacks.
- 4.6. List the major security threats that exist in ad hoc wireless networks.
- 4.7. Give the major objectives of the transport layer protocol.
- 4.8. What do you mean by quality of service (QoS) Provisioning?
- 4.9. What is the typical value of time out period in traditional TCP? In what ways these become a problem in mobile ad hoc networks?



- 4.10. List the issues and challenges in security provisioning of transport layer.
- 4.11. Define secure routing.
- 4.12. What are not supported by the traditional TCP for handling Adhoc network?
- 4.13. How is secure routing done on wireless channels/
- 4.14. Why secure routing protocols are needed?
- 4.15. Define QoS frame works.
- 4.16. Why does TCP not work well in ad hoc network? ( May/ June 2012)
- 4.17. What is byzantine attack? ( May/ June 2012)
- 4.18. What are the issues in designing transport layer protocol?
- 4.19. Comment on the use of natural language passwords directly for cryptographic algorithms.  
( Nov./ Dec2008)
- 4.20. Assume that the TCP sender experiences a timeout when the current congestion window size is 48 KB. Considering the MSS of 1 KB, calculate the size of the congestion window for which the next three transmissions will be successful. ( Nov. / Dec.2012)
- 4.21. List the issues in designing a transport layer protocol for Ad hoc wireless networks.
- 4.22. List the goals to be achieved in transport layer protocol for Ad hoc wireless networks.
- 4.23. List the network security requirements.
- 4.24. List some of the network layer attacks.

#### **UNIT IV - PART B**

- 4.25. Explain feedback based TCP and TCP BUS in detail. ( May/ June 2012)
- 4.26. Explain ad hoc TCP states and event action mapping in detail. ( May/ June 2012)
- 4.27. Explain the significance and design goals of transport layer protocol for adhoc network.
- 4.28. Explain the issues in designing a transport layer protocol for adhoc wireless networks.  
( May/June 2013)
- 4.29. Why does TCP not perform well in adhoc wireless network? Explain. ( May/ June 2013)
- 4.30 With any five major reasons, analyze why TCP is exposed to significant throughput degradation in ad hoc networks. (Nov./Dc 2012)
- 4.31. List and brief various network and transport layer attacks in detail. ( May/ June 2012)
- 4.32. Explain various network and application layer security attacks in detail. (Nov./Dc 2012)

#### **UNIT V - PART A**

- 5.1. What are the factors that affect effective cross layer design? ( May/June 2012)
- 5.2. State the use of embedded protocol boosters in cross layer optimization. ( Nov. /Dec.2012)

- 5.3. What are the classifications of integrated mobile IP network?
- 5.4. Why ad hoc network is integrated with MOBILE IP? ( May/June 2012)
- 5.5. State any two challenges faced by MANETs in adopting mobile IP. (Nov./Dec.2012)
- 5.6. List the issues of integrating MANET with mobile IP network.
- 5.7 What is wireless internet?
- 5.8. List the major issues in wireless internet.
- 5.9. What do you mean by encapsulation?
- 5.10. Define tunneling.
- 5.11. What do you mean by time to live (TTL)?
- 5.12. Give the categories of handoff.
- 5.13. What is cross layer feedback?
- 5.14. What is the need for cross layer design?
- 5.15. What is protocol optimizer?
- 5.16. How application layer is integrated with its upper layer?
- 5.17. List the different cautionary perspective of cross layer design.
- 5.18. List the four main categories of optimization.
- 5.19. What do you mean by Wireless transport layer security (WTLS)?
- 5.20. Define Wireless datagram protocol (WDP).

#### **UNIT V - PART B**

- 5.21. Explain integration of adhoc with mobile IP networks in detail. ( May/June 2012)
- 5.22. Explain the operation of optimizing sub system (OSS).
- 5.23. Explain the cross over time prediction. ( May/June 2013)
- 5.24. Explain COA, reverse tunneling and route optimization. ( May/June 2013)
- 5.25. Discuss briefly cross layer optimization technique in detail. ( May/June 2012)
- 5.26. Explain the significant challenges of generic cross layer design. (Nov./Dec.2012)
- 5.27. List the issues of utmost importance in mobile IP. ( May/June 2013)
- 5.28. Explain the various issues and solutions for integrating MANET'S to internet in detail.
- 5.29. Explain the features of a cross-layer model designed for multiuser scheduling. Also highlight how efficiency is improved through this model. (Nov./Dec.2012).
- 5.30. How link/MAC layer optimization is achieved with respect to its higher layers and physical layer? Also write its impact on bit rate and power control. (Nov./Dec.2012)