

Exam compilers: Dmitri Moltchanov and Yevgeni Koucheryavy

Calculator: not needed

1. Large-scale and small-scale propagation models: what are the differences
2. What are the differences between CSMA/CA and CSMA/CD?
3. Why CSMA/CD is not the best option for wireless networks?
4. Explain the hidden terminal problem. Illustrate it.
5. Explain the exposed terminal problem. Illustrate it.
6. Name some applications of ad hoc networks.
7. Please state what is MAC protocol, explain basic features
8. What are specifics of MAC protocols with scheduling?
9. What are specifics of MAC protocols with reservation?
10. Explain basic principles of reactive routing protocols
11. Explain basic principles of proactive routing protocols
12. Is it better to modify TCP or use another transport protocol in ad hoc networks?
13. Why TCP performance is bad in ad hoc environment?
14. Why not to use UDP for ad hoc networks?
15. What is the basic idea of split-TCP?
16. What is mesh network and what are the specifics?
17. Explain basic issues with HWMP. - *Hybrid.*
18. What specifics make ad hoc wireless network vulnerable?
19. What is the difference between passive and active attacks?
20. Network layer attacks. Please provide ideas and how to cope with.
21. Security: MAC layer attacks. Explain approach and targets
22. What is QoS assurance framework? What are specifics of this framework for ad hoc wireless networks compared to fixed IP networks?
23. Why the energy management in ad hoc networks is very important? List QoS parameters used in IP networks and point the most important for d hoc.
24. Explain the idea of relay traffic blocking approach.