# TLT-2707 Network simulation techniques

1. What are advantages of simulations compared to analytical analysis?
2. What is the difference between point and interval estimators?
3. Which variables affect the length of confidence limits?
4. What is the difference between continuous and discrete-event simulations?
5. Explain the basics of discrete-event simulation?
6. What are the time-advance methods in discrete-event simulation?
7. Which time-advance method is more general?
8. What is the event list?
9. What actions we have to be able to perform with event list?
10. What structures are used to organize event lists?
11. Which structure for event list is better in terms of locating the next element?
12. Validation of the simulation model? Is it important? How to do?
13. What is the general procedure to generate random numbers in simulations?
14. What is the basis of linear congruental generators?
15. What is the basic idea of composite generators?
16. Why generators must be tested for uniformity and independence?
17. Name some tests for uniformity and independence applied to generators?
18. Explain the idea of inverse transform method used for random numbers.
19. What methods of data collection exist? Why we need them?
20. Explain the idea of the batch means method.
21. Explain the idea of method of replications? Is it better than batch means? Why?
22. How to decrease the length of transient period?
23. How to detect the end of transient period?
24. How quickly confidence limits shorten increasing the number of experiments?
25. What is the purpose of variance reduction techniques?
26. Explain the idea of the method of antithetic variates.
27. Describe handling of arrival event in single server infinite capacity queue.
28. Describe handling of departure event in single server infinite capacity queue.