

Lect#1 Self-Study Guide

This self-study guide is specially designed for students to assist them in learning basic concepts of computer networking. This guide contains complete learning material and references to the content from where students can completely learn about the topics covered in the lecture#1 slides.

The learning material and exercises contained in this guide will assist students in their exam preparation. All the assessments, quizzes, assignments, and exams will be prepared keeping this guide in mind.

Disclaimer

This guide is only intended to assist students in learning and hence it contains lots of information copied from multiple sources and is not intended to breach any copyright.

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What is a computer network?

Page# 2 to 4 of [Computer networking a top-down approach 8th edition pdf](#)

<https://www.guru99.com/basic-computer-network.html>

<https://www.geeksforgeeks.org/basics-computer-networking/>

Devices used in computer networks

[https://www.geeksforgeeks.org/network-devices-hub-repeater-bridge-switch-router-gateways/#:~:text=Network%20Security-](https://www.geeksforgeeks.org/network-devices-hub-repeater-bridge-switch-router-gateways/#:~:text=Network%20Security-.Network%20Devices%20(Hub%2C%20Repeater%2C%20Bridge%2C%20Switch,%2C%20Router%2C%20Gateways%20and%20Brouter))

[.Network%20Devices%20\(Hub%2C%20Repeater%2C%20Bridge%2C%20Switch,%2C%20Router%2C%20Gateways%20and%20Brouter\)](https://www.geeksforgeeks.org/network-devices-hub-repeater-bridge-switch-router-gateways/#:~:text=Network%20Security-.Network%20Devices%20(Hub%2C%20Repeater%2C%20Bridge%2C%20Switch,%2C%20Router%2C%20Gateways%20and%20Brouter))

[https://www.geeksforgeeks.org/network-devices-hub-repeater-bridge-switch-router-gateways/#:~:text=Network%20Security-](https://www.geeksforgeeks.org/network-devices-hub-repeater-bridge-switch-router-gateways/#:~:text=Network%20Security-.Network%20Devices%20(Hub%2C%20Repeater%2C%20Bridge%2C%20Switch,%2C%20Router%2C%20Gateways%20and%20Brouter))

[.Network%20Devices%20\(Hub%2C%20Repeater%2C%20Bridge%2C%20Switch,%2C%20Router%2C%20Gateways%20and%20Brouter\)](https://www.geeksforgeeks.org/network-devices-hub-repeater-bridge-switch-router-gateways/#:~:text=Network%20Security-.Network%20Devices%20(Hub%2C%20Repeater%2C%20Bridge%2C%20Switch,%2C%20Router%2C%20Gateways%20and%20Brouter))

What is protocol in computer networking?

Page # 6 to 8 of the specified book

<https://www.comptia.org/content/guides/what-is-a-network-protocol>

Components of data communication

<https://www. chtips.com/computer-fundamentals/characteristics-of-data-communications/>

What is point to point connection?

<https://www.vedantu.com/question-answer/write-one-example-of-point-to-point-class-12-physics-cbse-5f2e1149d2506876ecbcce5b>

What is multi point connection?

<https://mynetworkingweb.wordpress.com/2016/12/28/multipoint-connection/>

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<https://www.tutorialspoint.com/difference-between-point-to-point-and-multi-point-communication#:~:text=A%20telephone%20call%20is%20an,sent%20by%20a%20single%20node.>

What is connection oriented and connection less service?

<https://www.tutorialspoint.com/Connection-Oriented-Services#:~:text=Computer%20Graphics&text=A%20connection%20oriented%20service%20is,it%20and%20then%20releases%20it.>

<https://www.geeksforgeeks.org/connection-less-service/>

<https://www.javatpoint.com/connection-oriented-vs-connectionless-service>

<https://www.studytonight.com/computer-networks/connection-oriented-and-connectionless-service>

What is circuit switching?

Page # 12 to 14 of the specified book

<https://www.tutorialspoint.com/circuit-switching>

<https://www.techtarget.com/searchnetworking/definition/circuit-switched>

See questions # 4 and 5 from the following link:

<http://web.mit.edu/6.02/www/f2012/handouts/tutprobs/switching.html>

Solve [this](#) exercise, this is just for practice, memorizing will not benefit you in the exam as not even a single MCQ will be taken from these questions in your exam. If there is any confusion in question, you can clarify that in the next class

I just want to clarify that total transmission time is also called total delay.

What is packet switching?

Page # 18 to 21 of the mentioned book

<https://www.tutorialspoint.com/packet-switching>

<https://www.watelectronics.com/packet-switching/#:~:text=Delays%20in%20packet%20switching%20are,queuing%20delay%2C%20an>

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[d%20processing%20delay.&text=The%20factors%20affecting%20the%20transmission,increase s%2C%20the%20transmission%20delay%20decreases.](#)

For this [link](#), only the first six questions are related and are to be solved. If there is confusion, you can ask me via email, in my office, or in class. But first try to solve them on your own.

What is frequency division multiplexing?

<https://www.fiberopticsshare.com/multiplexing-and-demultiplexing-differences.html>

What is time division multiplexing?

Book pages #17 to 18

<https://www.techopedia.com/definition/9669/time-division-multiplexing-tdm>

<https://www.techtarget.com/searchnetworking/definition/frequency-division-multiplexing>

<https://www.linquip.com/blog/what-is-frequency-division-multiplexing-fdm/>

What is time division multiplexing?

<https://www.linquip.com/blog/what-is-frequency-division-multiplexing-fdm/>

[https://www.geeksforgeeks.org/circuit-switching-in-computer-network/#:~:text=Time%2Ddivision%20multiplexing%20\(TDM\),traffic%20loads%20from%20end%20user.](https://www.geeksforgeeks.org/circuit-switching-in-computer-network/#:~:text=Time%2Ddivision%20multiplexing%20(TDM),traffic%20loads%20from%20end%20user.)

What is Datagram in packet switching?

Page# 25,26

<https://www.geeksforgeeks.org/difference-between-datagram-switching-virtual-circuit/>