

Name: _____
PLEASE PRINT CLEARLY**EE-NET Exam No. 2 (100pts.)**

ERR: _____ PTS: _____

General Remarks

Please answer each of the following ten questions by outlining only the most important facts and/or features. Your answer will be graded based on whether you mentioned all of the most important features or fact and whether you did it in the concise way. Answers longer than half a page of 10pts font single spaced lines (excluding figures) will be somewhat penalized. Please staple this page to the front of your exam. Please read the submission guidelines located at the end of this exam.

Problem 1 (10pts.)

Explain the difference between byte stuffing and bit stuffing in data link protocols. (What they are and how do they differ.)

Problem 2 (10pts.)

List and briefly describe the known switching circuits. In case of packet switching, explain briefly the idea of that method.

Problem 3 (10pts.)

Briefly, compare ISDN's X-25 protocol and Frame Relay Protocol. Comment the differences. (List all common features, and then list and comment the differences. I.e. X-25 does that while F.R. does that instead/does not do anything like that because....)

Problem 4 (10pts.)

Explain the concept and justify why leaky bucket algorithms are necessary in some types of networks and/or transmissions.

Problem 5 (10pts.)

What are the main advantages of ATM?

Problem 6 (10pts.)

What are the section, line and path in SONET?

Problem 7 (10pts.)

What are the common features and differences among repeaters, bridges and routers? (List all common features, and then list and comment the differences. I.e. X does that while Y. does that instead/does not do this at all, and Z does it that way instead.)

Problem 8 (10pts.)

List what are the main tasks of the transport layer in TCP/IP?

Problem 9 (10pts.)

What are ICMP and ARP in IP networks, and why they are so important. (What information do they provide?)

Problem 10 (10pts.)

In IP based networks, explain the concept of Network ID, host ID, mask and subnetting.