Jason’s Point

Students greatly appreciate Dr. Peyravi’s willingness to include a review day before exams. However, we are concerned that Dr. Peyravi still holds to the belief that all the questions on the exam had been covered by either the textbook, the slides, the lectures, or the homework. This is factually inaccurate.

Q1: Lecture note 1, page 24, 33, homework 1 (problem4) [solutions posted before the exam]

Dr. Peyravi references "Lecture note 1”. This is ambiguous, but it can be assumed that he is speaking of the first set of 56 slides.

In these slides:

* “Efficiency” is never mentioned
* No methods, strategies, or examples are discussed concerning calculating efficiency
* Headers and payloads are never mentioned at all.
* Packets are never covered
* End-to-End and Point-to-Point communication are mentioned once: they’re mentioned in the “What’s Next” section. The slides say that P2P and E2E will be discussed in chapters 3, 4, 5, and 6, ***but the test is only over chapters 1 and 2, which is all we’ve covered thus far.***
* Specifically, E2E and P2P are never referenced in relation to HTTP, TCP, IP, or Ethernet.
* Connection-Oriented and Connection-less-Oriented services are discussed, but never in relation to HTTP, TCP, IP, or Ethernet, which is what is asked on the exam.

Dr. Peyravi mentions page 24 of the textbook.

Page 24 discusses subnets, transmission lines, switches, and routers. None of these are topics in problem 1. It never mentioned efficiency, calculating efficiency, End-To-End or Point-To-Point communication, connection-oriented/connectionless-oriented services, or HTTP/TCP/IP/Ethernet. In short, nothing on this page has any relation to any part of problem 1.

Dr. Peyravi mentions page 33 of the textbook.

Page 33 is slightly better than page 24, as it discusses the theory behind transmission between layers. However, it gives no example of calculating efficiency, nor does it discuss how to calculate efficiency. No real examples of real problems with real numbers are given, it is only the introductory theory. It also doesn’t cover End-To-End or Point-To-Point connection in the slightest, and it never mentions connection-oriented or connectionless-oriented layers.

Dr. Peyravi mentions HW1, problem 4.

Problem 4 asks us to calculate the fraction of the network bandwidth that is filled with headers, using variables. This problem is relatively straightforward algebra, however, it did not help prepare students for the exam. No problems are given concerning calculating efficiency, and there are no examples with real numbers rather than variables. Moreover, there are no examples concerning maximum payload or splitting packets. And of course, there are no problems concerning End-To-End or Point-To-Point connections. There are also no problems concerning connection-oriented or connectionless-oriented layers.

Q2: Homework 1 problem 5 [solutions posted before the exam]

HW1 Problem 5 is as follows: “An image is 1024 x 768 pixels with 3 bytes/pixel. Assume the image is uncompressed. How long does it take to transmit it over a 56-kbps modem channel? Over a 1-Mbps cable modem? Over a 10-Mbps Ethernet? Over 100-Mbps Ethernet?”

This is a simple homework problem, because it boils down to rate \* time = distance. However, expecting that students will then know how to utilize a never-before-seen, never discussed, never taught, confusing formula on a topic that Dr. Peyravi is recorded saying will never be covered (queuing delay), is unacceptable. Imagine that there exists a Calculus 1 student who is very good at solving definite integrals. Would they then be expected, without ever having seen such a topic, to solve a triple integral in cylindrical coordinates from Calculus 3? This is analogous to the jump between homework 1, problem 5 and the question on our exam.

There is, of course, an easy solution. If students were taught queuing delay, taught the formulas, learned with example problems in class, and then given example problems on the homework, there would be no quarrel. All we want is to learn the material we are being tested on.

Q3: Lecture notes Examples 2.5, 2.6, Problem 1

Question 3 on the exam is the one question where students generally agreed that we had covered enough material to solve it with a reasonable degree of accuracy, although we still would have preferred more example problems given.

Q4: 2.2, 2.3, and 2.4, homework2 Problem 1

Homework2, problem 1 has nothing to do with this problem; that problem utilizes the Shannon theorem, which is unrelated to any of question 4 on the exam.

There are, however, a few examples in the slides of length in time / length in meters. Students wish this was covered in more detail, and that more examples were given, but at least it exists.

Unfortunately, even though some examples are given, they are only the simplest examples possible. No examples are given of a 1 KB packet being sent, and no examples are given of combining these calculations with total delay.

While question 4 remains more reasonable than question 1 and question 2, many students still felt very underprepared due to only one example being shown, it being very simplistic, and it being covered very quickly.

Q5: Homework 2, problem 3 and lecture notes slides 2.82-2.87

Homework 2, problem 3 is a math question, making use of the Nyquist theorem. Despite it mentioning multiplexing, it is in no way related to question 5, which requires in-depth knowledge of the pros and cons of various multiplexing techniques, how precisely they work, and which is best in which scenario. The focus of problem 3 in the homework is the mathematical calculations, which is entirely different.

Multiplexing techniques are indeed covered in the slides, however adequate information is not provided for this question on the exam. The only multiplexing technique that has a few listed pros and cons is Code Division Multiplexing.

Frequency Division Multiplexing doesn’t even have any textual bullet-points; it is only on the slides as a convoluted graphic. This is utterly insufficient for students to have any practical knowledge of the pros and cons of TDM, or what situations it would be best-suited for.

Likewise, Time Division Multiplexing and Wave Division Multiplexing were both not covered in enough detail and lack the requisite information on the slides for students to have any likelihood of being able to express the deep, practical knowledge required on the exam.

The easy solution to this would be to simply add a slide going over what situations are best for each multiplexing technique, as well as a pros and cons table for each one. How are students expected to know pros and cons that they are not taught?