

Feedback for EEE6431 Session: 2015-2016

Feedback: Please write simple statements about how well students addressed the exam paper in general and each individual question in particular including common problems/mistakes and areas of concern in the boxes provided below. Increase row height if necessary.

General Comments:

Overall the examination was challenging with the majority of students attempting questions 1,2 and 3. The paper was of a similar standard to the previous year, though a higher examination average mark was achieved this year. As for previous papers, the students were most challenged by design based questions though quite a large number of marks were missed through students not answering theory based questions, which required descriptive answers.

Question 1:

All students attempted question 1 and in general, this question was answered well. However, a common mistake was made in Part (b) whereby students were asked to prove an answer. Instead, students construed an incorrect pathloss formula derived from the answer given. Those students who made this mistake then failed to use the correct given answer in subsequent parts of the question, resulting in further marks lost.

Question 2:

Though slightly more challenging than question 1, this was the second most popular question answered. Students coped well with the mathematical calculations, but tended to perform poorly on the descriptive answers, particularly in Part (a), which tested basic multipath propagation theory. Most students struggled with Part (d) even though the answer could be derived in a straight forward manner from first principles.

Question 3:

Question 3 was also attempted by most students. Again, the descriptive answers were poorly answered especially in Part (a), where incomplete definitions was a common error – few students mentioned that the channel taps are complex numbers, per se. Several students continue to commit the common error of misusing the power delay profile in Part (b) and frequently units were omitted. Part (d) was answered well, with most students completing the optimization algorithm for the correct SNR values. However, a common mistake was to use the wrong Shannon formula or use the correct formula incorrectly!

Question 4:

Only a few students attempted this question and those that did answered either incorrectly or incompletely. Again, students were challenged by the basic theory in Part (a) on multicarrier modulation, while struggling with the calculation of CP for the MP channel given in Part (c). However, part (d), which is computationally the most challenging part of the question, was reasonably well answered.

Question 5:

Question 6:

Question 7:

Question 8: