Feedback for EEE6430 – Mobile Networks and Low Level Protocols Session:2007-2008

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 paper average a little disappointing. A few cases where candidates answered 'phantom' questions. I guess they were just churning out everything they could remember irrespective of what was asked for. Occasionally this 'scatter gun' approach hit a target and a couple of marks were gained, but it is not recommended as a tactic. In some instances handwriting was difficult to read. Although the benefit of the doubt was given in most cases, candidates should try to be legible, especially when writing some 'key' words which could determine a mark. Generally not a problem with the maths.

Question 1:

(a) Most candidates sketched reasonably synchronized bit sequence diagrams, but marks were lost if they didn't make the spreading code rate faster than the data rate, and also if they didn't explicitly state where waveforms were either exclusive OR'd, added or multiplied.
(b) Either candidates knew the definition here or not… most appreciated that signals could be buried up to 20dB in noise.
(c) Confusion here between channel data rate and bit rate, and to a lesser extent between symbol and bit rates.
(d) Again while most students got the right idea about using parallel codes, they gave bit rates rather than data rates.

Question 2:

(a) Some candidates derived the array factor here. Not asked for! Just use the formula given in the question. Otherwise a generally good attempt at this array question.
(b) The main comment here is that many confused time diversity which involves Rake processing, with frequency diversity (i.e. hopping). Not the same thing.
(c) Not well answered. Hardly anyone mentioned the head getting in the way between BTS and MS and the effects of altering the MS orientation. Most picked up a mark or two by mentioning handovers and tri-sectored radiation patterns.
(d) Most got the idea of the MS sticking with the current cell or BTS. An easy couple of marks…

Question 3:

(a) Most candidates knew QPSK and FSK, but MSK was a little less well known.
(b) Very few picked up on the fact that 217Hz intermods in the body are not too far removed from 50Hz power line fields, which are the subject of continued health debate.
(c) Most said 'No' for an easy mark, and some did elaborate further.

Question 4:

(a) Most candidates knew the multi-frame structures, but a few did not appreciate how they fitted into a super-frame.
(b) The interleaving of data bits from adjacent speech blocks on bursts was not well explained here.
(c) Marks were lost if ballpark data rates were not given.
(d) 'VoIP' for an easy 2 marks.

Question 8: