

## **Feedback for EEE6430 Session: 2009-2010**

**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 low. I do not think the paper was particularly hard, and it was commensurate with previous years.

### **Question 1:**

Best answered question.

- (a) Straight bookwork, with marks easily picked up for common sense answers.
- (b) Some confused *bit* cancellation with *carrier* cancellation. These are two different things.
- (c) Some added *dBm* figures to *dBW* values, which made the propagation loss incorrect. Also some people added extra loss terms not given in the question, but that's ok.

### **Question 2:**

Worst answered question.

- (a) Marks were gained for explaining what each channel was used for, plus spreading factors, bit rates etc.
- (b) Quite a few missed the meaning of *instantaneous bit rate* (emphasis on instantaneous), and that QPSK doubles the bit rate on the down link.
- (c) Again general confusion by some with differences between *instantaneous* & *average*, and *bit* & *data* rates.
- (d) No one mentioned that any channel using this should only require a low average data rate.

### **Question 3:**

- (a) Most people made a reasonable attempt at this.
- (b) Some went right back to the speech codec in their descriptions, when it was the *mapping* of the 456 bits onto the traffic channel that was asked for, how they are interleaved over the bursts etc.
- (c) Again some confusion between channel *bit* and *speech data* rates.

### **Question 4:**

- (a) Most people got this.
- (b) The number of people who can't calculate the length of the hypotenuse using *cos* rule surprised me.
- (c) Pretty well answered.
- (d) Parts (b) and (c) were there to emphasize that the power density on your head from a mobile handset ~ 1000 times more than when standing under BTS. Marks were gained for highlighting this point, plus mentioning about the main lobe direction into a nearby bedroom window, duty cycle of BTS vs MS etc.