

Examination Feedback for EEE6011 Antennas and Propagation  
Spring Semester 2008-09

### **Feedback for EEE6011 Session:2008-2009**

**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:**

The paper average is about right for the student cohort level.

**Question 1:**

This was the best answered question.

- (a) Well answered with 4 simple sketches. Marks were lost if the current lobes were shown in anti-phase for the full wave dipole, and if the full wave dipole main lobe was not shown to be narrower than that for the half wave dipole.
- (b) Generally well answered. Be careful to express directivity in dBi.
- (c) Worryingly some thought that a half wave dipole had the greater directivity.
- (d) Most mentioned relative impedances of both antennas, requirement for balanced feeder and balun.

**Question 2:**

This was the second best answered question.

- (a) Just about everyone gave a correct sketch of a trapped dipole, but the explanation of operation was sometimes confused.
- (b) Most people gave correct radiation pattern sketches relative to the electrical height above the ground.
- (c) Generally well answered. Be careful to properly define distances and angles in a sketch.
- (d) The station distance was chosen to be  $n \sim 4$  hops and  $n \sim 1$  hop at the lower and upper frequencies respectively. Most thought that because  $n$  hops didn't *exactly* equal the distance then this answer wasn't relevant.

**Question 3:**

Third best answered question, or the second worst answered question (is glass half full or half empty?)

- (a) Some people reverse engineered the final result.
- (b) Remember (i) answer in dB not dBi (ii) negative result in dB.
- (c) Most people got the correct increase in directivity, but the reason for the larger dish size was not appreciated by many, and it has nothing to do with Scotland's hilly terrain!

**Question 4:**

Worst answered question.

- (a) This is pure memory, and was only correctly answered once, although a mark was given to a few who stated that public exposure limits are five times less than occupational.
- (b) The best answered section. Most people got the monopole + image idea.
- (c) The number of people who took the square root of the resultant field vector, when SAR is proportional to the square of the field! The given field levels are designed to give 1000, which cancels nicely with the tissue density. Always look for easy cancellations such as this as a guide you are on the right track.