

## **Feedback for EEE331/6037 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:**

The overall exam performance has again slightly improved over the previous year, in particular of students sitting the EEE331 exam (EEE6037 performance was also up, but only very slightly). Again, the performance results were generally better in those parts that required reproduction of learned facts compared to those that asked for the application of learned concepts. Questions similar to those in past exam papers were mostly answered confidently, while new questions resulted in a large scatter in performance. An additional tutorial was offered this year where last year's exam was discussed in detail and which was attended by 18 students.

### **Question 1:**

The questions on single stage BJTs were answered competently by almost all students and the average performances of EEE331 and EEE6037 students were similar. As in the previous years, many marks were dropped not due to the difficulty of the questions but because students did not read the questions carefully and wasted time on circuit details that were not demanded and instead omitted details that would have gained them marks, such as simple definition of variables, clear indication of voltage connections and brief statement of approximations. The two questions on common-base set-up and Miller effect were new. Most students tried to solve the latter by memorizing equations rather than deriving them, which lead to numerous confusions about signs and numerators/denominators.

### **Question 2:**

The first two questions on multiple BJT configurations were similar to last year's questions while the second half (on AB push-pull configuration and the interpretation of a given amplifier circuit) were new. EEE331 students seemed to have fewer problems with these than EEE6037 students.

### **Question 3:**

As in the previous year, the questions on MOSFETs were tackled only by a small minority ( $\frac{1}{6}$ ) of the students. All questions were rather novel and had not been tested before. The overall result seemed relatively poor for EEE331 students but OK for EEE6037 students.

### **Question 4:**

All questions on leap-frog ladders and filters were similar to previous exam questions and were answered very well by most students. This was the only question where students scored easily more than half the mark points on average. Weaknesses included the linking of the symbols in the leap-frog-ladder with Ohm's Law related to the corresponding impedances (resistors, capacitors and inductances) and a general inability to tackle sub-tasks systematically without getting confused or forgetting to address some.