

## **Feedback for EEE6208 Session: 2014-2015**

**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:**

Most students attempted the questions from the analog part of the course. The attempt at the digital questions was disappointing as many marks were lost for not being able to reproduce the straightforward 'bookwork' parts of the questions.

DIGITAL(Q4,Q5,Q6): Make sure you have covered ALL of the lecture notes so that you can pick up full marks for the straightforward parts of the questions.

### **Question 1:**

Most students did well here. The book work section (a) gained most students some easy marks. I was pleased with the small signal models in (b), which were generally correct, as were the gain calculations. Part (c), looking at a PMOS current mirror, was the tricky part of the question and many students were confused about the PMOS geometry (e.g diode connecting gate and source rather than gate and drain).

### **Question 2:**

Although it was quite an open-ended question, the majority answered this well. Particularly impressive was the use of nodal equations in (a). The zero-value analysis in part (b) was also quite well addressed, although I would have liked to have seen more steps in some of the workings-out.

### **Question 3:**

Of the analogue questions, this was the least well tackled. There was confusion over differential/common mode half-circuits in (aiii) and (bi), and in calculating the resistors to give max swing in (aia) ( $V_{out}$  should sit around halfway between the supply rails). Most students wrote  $1/0 = \text{infinity}$  in (biii) – but more explanation was necessary!

### **Question 4:**

A reasonable attempt at each part of the question but more marks should have been obtained from part (a).

Part (c) was indeed difficult but prior to that the 14 marks were very accessible.

### **Question 5:**

Again, poor marks on the bookwork. Some good attempts at the final parts.

Students need to be able to (1) Step back and set up the problem (2) Solve with the appropriate equations. Problems occurred when students just try to apply equations.

### **Question 6:**

Some good attempts at this question:

- (a) Well attempted by most, some problems explaining the use of a guard ring.
- (b) Many students put in too many stages. The question was designed to easily scale up to 1pF.
- (c) Most students who attempted this managed to complete the full derivation.