Examination Feedback for EEE118 – Electronic Devices and Circuits
Spring Semester 2014-15

Feedback for EEE118 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:

On the whole students continue to prefer answering the circuits part of the exam.

Question 1:

Many students found Q1 difficult. Both the peak detector description and the pulse circuit which followed. Describing how a circuit reacts to a signal as a function of time requires a solid understanding of how the circuit works, and this was shown to be lacking in many cases.

A large number of marks were available for the pulse circuit part of this question. This should have indicated to candidates the quantity of work involved. Many students who favored a mostly circuits approach to the exam found this question was their undoing. Several students got full marks on this question however, which was very pleasing.

Question 2:

Many of the answers were very superficial, demonstrating lack of in-depth understanding of how the MOSFET works. Some got confused with the JFET and described that instead. The calculation of gate length (d) was done reasonably well.

Question 3:

Q3 was generally answered well by many students. The switch is usually answered well, although calculating Vds post switch-off was not done well by most students this year. The one transistor amplifier question is quite formulaic, but several candidates misread the question and provided answers that were not asked for and failed to provide answers that were required despite having done almost all the working out properly.

Question 4:

The description of the bipolar transistor was done fairly well but again many answers lacked the detail to get full marks. The simple calculation (b) was done well. Most students attempted the calculation in (c) but a lot got 'lost', resulting in numerical errors

Question 5:

Many students found it difficult to manipulate the exponential diode current expression to extract the bias voltage. The series resistance calculation was done well by most students. Only a few appreciated how the series resistance affected the diode I/V characteristic and the consequent loss of efficiency in a practical rectifier. Part (d), relating to temperature dependence of leakage current, was done badly, exposing a lack of in-depth understanding. Section (e) on the LED was done reasonably well.

Question 6:

Q6 was generally answered well by most students. Students incurring a sign error in part (d) were marked generously to reflect the typo in the exam.

Question 7:

Question 8: