Examination Feedback for EEE223 – Energy Management & Conversion
Spring Semester 2014-15

Feedback for EEE223 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:

Question 1:

Answered by quite a large number of students ~90. This question produced some good answers, some didn't give both equivalent circuits and state the assumption required to move from one to the other, others had trouble deriving the output torque equation, insisting on deriving the pull-out torque instead, which was not what I asked.

Question 2:

A number of students couldn't tell the difference between dc motors and induction motors, giving me definitions based around an induction motor. In addition, a large number of people could not get the calculation correct, or even know how to attempt it, and it was similar to one on the tutorial sheet.

Question 3:

Some good answers for this, but also students who struggled with the calculations.

Question 4:

This question was well received with a number attaining full marks. For part c, some people did not read the question using Iout=10A, some also omitted the series resistor voltage drop and/or forgot to subtract the output voltage to get Vt. Similar comments for part d but quite a few incorrectly drew the thermal equivalent circuit diagram by using parallel branches or event incorporating voltage sources for Th.

Question 5:

Disappointing response to this question. A number of candidates just appeared not to have revised this at all. Common mistakes included incorrect drawing of waveforms (it was not a buck-boost converter), basic algebra manipulation errors in part b. Many opted not to complete part e.

Question 6:

Another disappointing response. Again, incorrectly drawn waveforms, mainly placing the switching plateau in the place w.r.t. Vds and Id. Part c, one MOSFET (TA) has to fully turn off before the other (TB) begins to turn-on. So the turn off events for TA tdelay_off+Tswoff must be less than TB turn on delay.