

Examination Feedback for EEE6205 – Power Electronic Converters
Spring Semester 2014-15

Feedback for EEE6205 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 of the students tried to solve Question 1 and Question 4. These questions were related to the course material that they had a chance to analyse in more detail using MATLAB/SIMULINK simulations.

Question 1:

The analytical part of the question was successfully solved by most of the students. However, they struggled to explain the dead-time effect on the output voltage of the converter.

Question 2:

The most common mistake was not realising that in the SVM the amplitude of the reference output voltage vector stays constant during rotation.

Question 3:

The students struggled to determine which SCR devices are ON at any instant although they managed to draw the voltage waveforms correctly. This is an indication that they did not understand conduction conditions of SCR devices correctly.

Question 4:

The first part of the question dealing with the six-step converter was very successful. Less successful was the part that dealt with the equivalent circuit during IGBT TURN ON.

Question 5:

Only a few students tried to solve this question, although it was in full provided in the lecture notes. It requires state-space modelling skills and it seems that most students were not comfortable with this material.

Question 6:

The most common mistake was not realising that the voltage across the dc-link capacitor has to be ZERO to achieve zero-voltage switching. The analytical part of the question was more successful, while most students showed a lack of understanding of the operational principals of the resonant converter.