Examination Feedback for EEE6204 – Permanent Magnet Machines & Actuators
Spring Semester 2015-16

Feedback for EEE6204 Session: 2015-2016

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:

Students performed generally well. Most students have attempted so answer the first 4 questions and only a few students have tried to answer the last two. It is quite surprising to see the average mark for question 5 is that low, although it is supposed to be an easy question.

Question 1:

Most students have attempted to answer this question, and a relatively good average mark has achieved. The common mistake for this question is that students failed to notice that the magnet is not full arc. Moreover, the electrical loading calculation should use twice the total ampere-turn.

Question 2:

This question is the easiest one. The common mistake is that for single layer machines, there is only 6 coils in total rather than 12.

Question 3:

Most students have attempted to answer this question. The main difficulty is to calculate the airgap flux density and the magnet flux density. It is important to use the magnet flux density in order to work out the magnet length, however, the airgap flux density can be used to calculate the design constant. Most students can tell the difference between the BLDC and BLAC drives.

Question 4:

This question is not difficult, a summary of lecture notes. However, the most difficult part is to tell why single phase machines have difficulty for self-start while 3-phase machines do not have this problem.

Question 5:

It is very surprising to see only a few students have attempted to solve this question. Although some have tried, the average mark is quite low. This question is supposed to be quite easy, especially the questions a, b, c and d, which are for airgap winding, so the thermal flux path, and relevant lumped parameter thermal model should be straightforward. Students seem not to be very flexible, and try to use exactly the same example in lecture notes to solve this one, which obviously leads to mistakes.

Question_6:

Question_7:

Question_8: