

Examination Feedback for EEE6022 – Motion Control and Servo Drives

Autumn Semester 2012-13

Feedback for EEE6022 Session: 2012-2013

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 performed quite well on questions 1-3. In general students find it difficult to answer questions that require them to explain underlining principles.

Question 1:

Most students did very well on the question. Some students, however, made simple mistakes in numerical calculations.

Question 2:

The effect of reduction gear, i.e., the gear ratio, must be taken into account when determining the motor torque and the transfer function between the applied voltage and load speed. It should also be noted that the torque ripple is a function of duty ratio. Thus, in order to quantify the torque ripple in the question, one must first determine the duty ratio of the operation.

Question 3:

Need to fully understand the phasor diagram of the synchronous PM motor operation in order to derive the torque expression and identify an appropriate control strategy.

Question 4:

Most students find it difficult to answer Q4 (b), which requires good understanding of the principle of operation of V/fs control.