Examination Feedback for EEE220 – Electric and Magnetic fields
Autumn Semester 2011-12

Feedback for EEE220 Session: 2011-2012

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:

Generally well answered. The vast majority of students did not attempt Q4 , probably as this was a "new" question.
As in previous years students lost marks for:
1 failing to answer the question asked
2 Not explaining reasoning when deriving an equation
3 Poor diagrams
4 Not defining terms

Question 1:

A) A standard derivation but some students failed to state assumptions, define terms or draw a diagram to illustrate the problem
B) Main error was that students did appreciate that the field was simply the sum of the two fields generated by the plates. Some used the formula for a point charge or a line of charge. Think about symmetry
C) Various wrong answers such as calculating the field from a point charge. Simple vector addition would give correct answer
D) Easy solution was to split the path of integration into 2 straight line sections in x and y directions

Question 2:

A) Answered well, but some errors due to using wrong equations
B) A simple solution to this problem is just to realise that the largest charge produces the largest field
C) This question caused some confusion as some students thought that the capacitors were in series rather than parallel. Some realised that they were in parallel but used the equation for combining series capacitors
D) Most problems occurred due to simple numerical errors

Question 3:

A) Marks lost due to poor derivations: failure to state assumptions and define variable etc
B) 1) Generally well answered - some students did not know what equation to use
2) Similar comments to part A). Also please draw a diagram to illustrate the problem - this is particularly important if your solution has cos(theta) or sin(theta). Both solutions can be correct but students need to define the reference for theta
3) Answered well

Question 4:

Very few students answered this question
A) Students who attempted Q4 generally did well on part A. Problems occurred due to incorrect choice of formula for the problem and failing to appreciate that the fields due to the 2 arc sections are in opposite directions.
b) Again, failure to state assumptions in the derivation and applying incorrect formula