

Examination Feedback for EEE112 – Engineering Applications of Mathematics  
Spring Semester 2012-13

### **Feedback for EEE112 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 are not required to take this final exam having passed the module by doing sufficiently well in the continuous assessment exams taken during the year. Of those taking this exam, most did poorly.

The exam paper Formula sheet Trig. Identities contained a mistake. The brackets were missing after the  $\frac{1}{2}$  for the SinACosB etc. identities. Any student tackling the relevant question was given the benefit of the doubt (of those that did tackle it all bar one used the correct form of the identity).

**Question 1:**

These basic questions were mostly done quite well however few spotted the need to use the Chain Rule to help with differentiating the last item.

**Question 2:**

Solving differential equations was very poorly done, few seem to know what to do.

**Question 3:**

A surprising number of students were unable to sketch the waveform and particularly to correctly label the points where it crossed the  $i=0$  axis. Re-writing as a cosine function is simply a matter of recognizing a sine wave can be represented by an equivalent cosine wave that is phase shifted by  $-\pi/2$ .

**Question 4:**

All the magnitude was usually found some students failed to check which quadrant the angle  $\alpha$  should be in. Part b is all about looking for ways to simplify the equation using appropriate trig identities from the formula sheet.

**Question 5:**

This question was usually tackled with the correct method but students failed to keep a check on the sign of numbers and minus signs disappeared from time to time causing the results to become corrupted.

**Question 6:**

Most students recognised how to tackle this question correctly. Mostly just a matter of re-arranging the equations.

**Question 7:**

This question was popular but like question 5 students need to take more care.

**Question 8:**

Only a couple of students tried this question yet it was easy for those able to switch complex numbers between Cartesian and Polar forms

**Question 9:**

If tackling this question it is important to use the correct formula for the waveform being examined! Similarly it is important to use the correct R.M.S. form.

**Question 10:**

Only one student tackled this question. Remember, when plotting data using logarithmic scale graph paper you do not need to convert the data by finding the log of each value first, the log scale on the graph paper puts it into log form, you just use the linear values!