Examination Feedback for EEE336 – Digital Systems
Spring Semester 2013-14

Feedback for EEE336 Session: 2013-2014

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:

Many individual parts of questions were well attempted but some students could not attempt all parts of the questions that they chose to answer. You need to cover all parts of the course as an individual question may cover several topics. It was obvious that many students had a limited depth of understanding to some of the more descriptive questions. This comes from studying the material well in advance and seeking clarification at the problem classes which were very poorly attended.

Question 1:

Part(a) – Surprisingly, many students lost marks on this part which was straight from your notes. Even without doing the course, you should be able to give some description of a floating point number.
Part(b) – Generally well attempted. Remember to work out the size of the product in advance so you know what bit length to use for your arithmetic.
Part(c) – Extended bookwork requiring a good explanation. You needed to identify the three possible cases as indicated in your notes.

Question 2:

Part(a, b, c) – Well attempted by most. Part(c) required a good explanation to get the marks and many answers were too vague.
Part(d) – Most students could give good reasons for a RISC architecture but not on the advantages of having a reduced number of instructions with respect to the hardware. Many students mistakenly thought that a RISC program would require fewer instructions than a corresponding CISC program. The question required you to comment on the complexity of the control circuitry and the corresponding effect on the CPU clock speed.

Question 3:

Part(a) – Well attempted most students getting full marks for this bookwork. Remember to explain the advantages and not just describe the differences.
Part(b) – Generally well attempted. Marks lost for not working in 8-bit binary and not indicating that restoration of the remainder was required.
Part(c) – Many students had problems with this but it was the tricky part of the question. However, the technique to reduce the ROM size is more bookwork. Full marks were also given for simply reducing the number of samples held.

Question 4:

Part(a) – Well attempted but good explanations required for full marks.
Part(b) – Most students realized that non-blocking assignments were required for a pipelined solution but few drew a diagram, as required, of the original circuit synthesizing to a single register and few came up with a use for the circuit.
Part(c) – Mixed attempts at this, many solutions more closely resembled a computer flow diagram than an ASMD chart. Few students described the required states. Several students produced the circuit diagram for the multiplier shown in the notes but there were no marks for this.